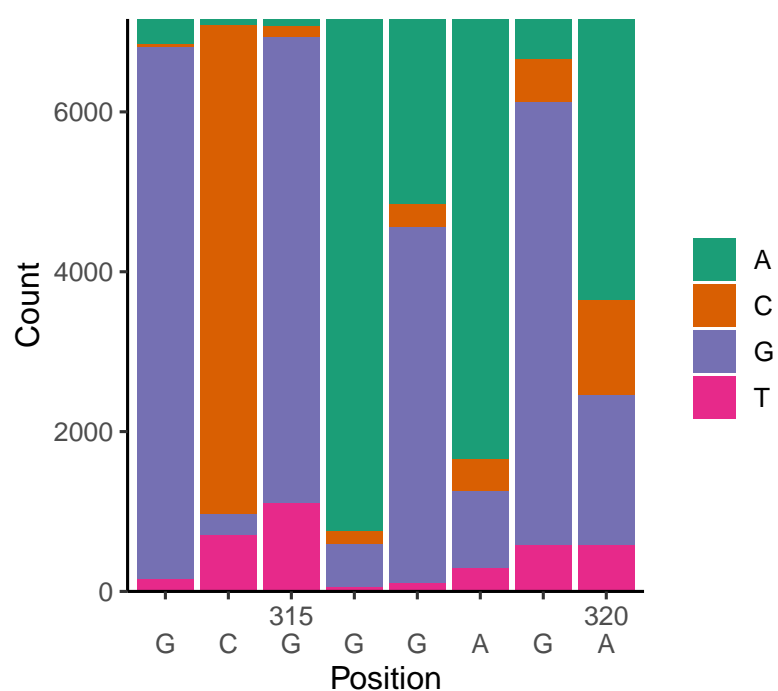
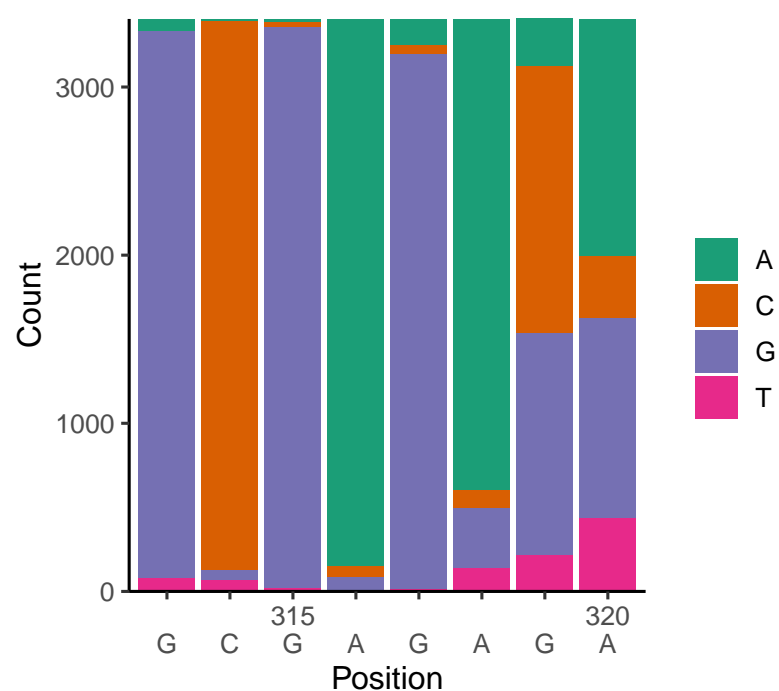


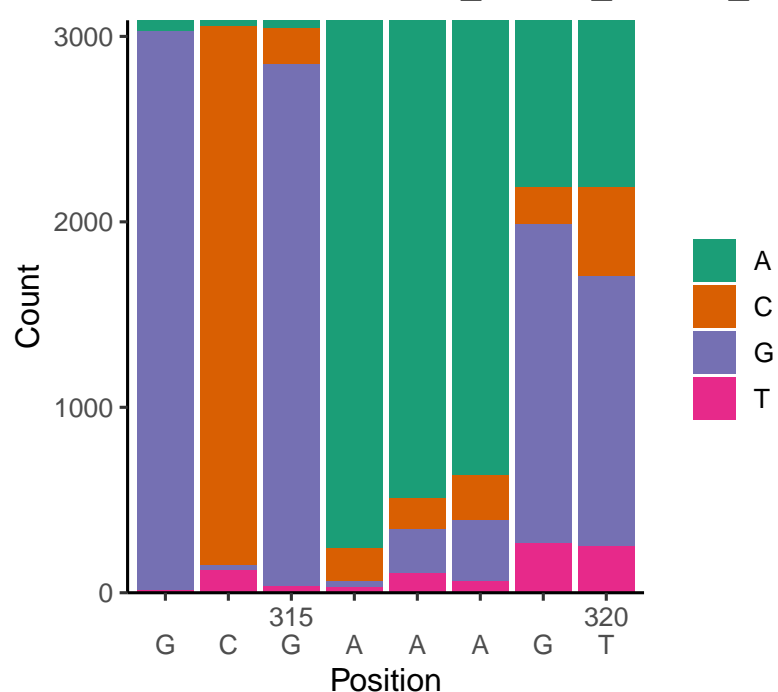
Gene IGHV3-28*02_C118T_C176G_A18



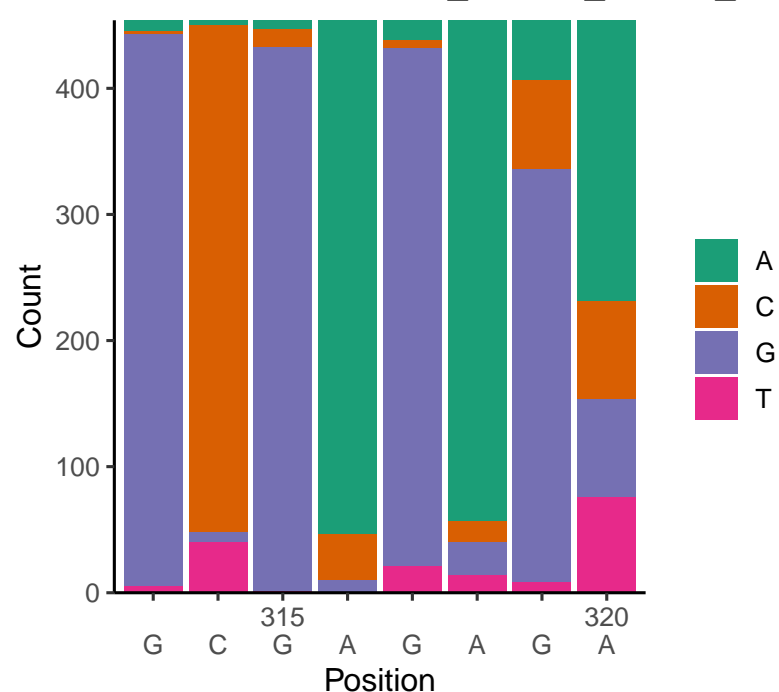
Gene IGHV4-73*01_G147A



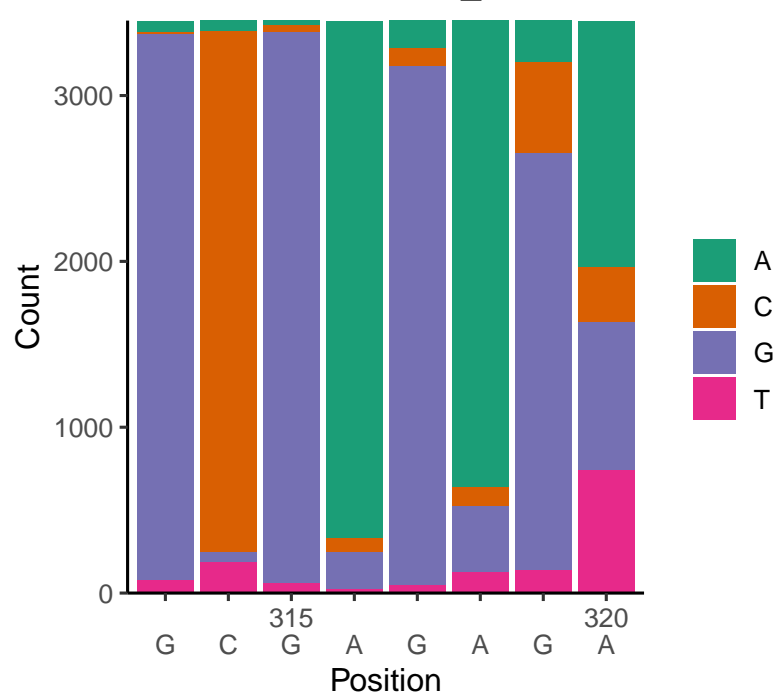
Gene IGHV5-43*01_A109T_G110A_G111A



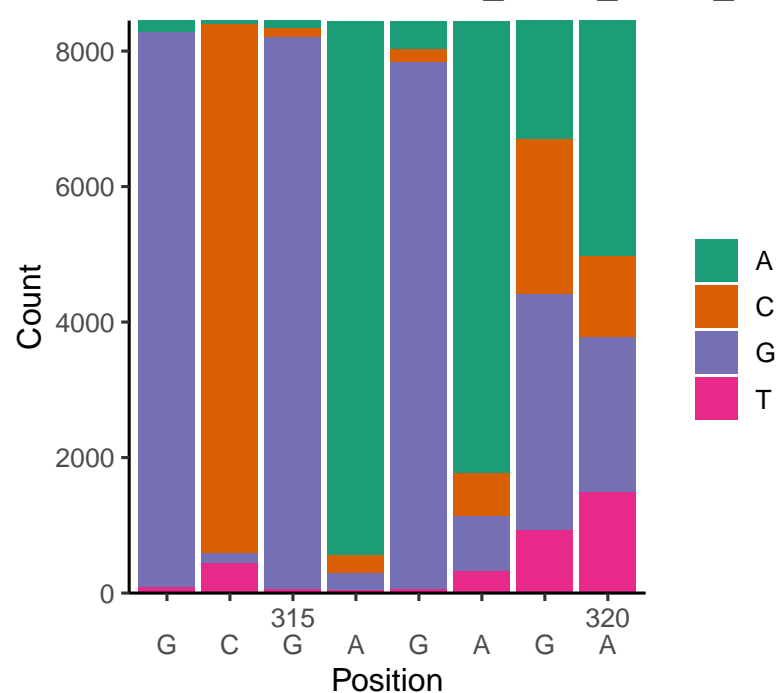
Gene IGHV4-73*01_G147A_T163A_C16



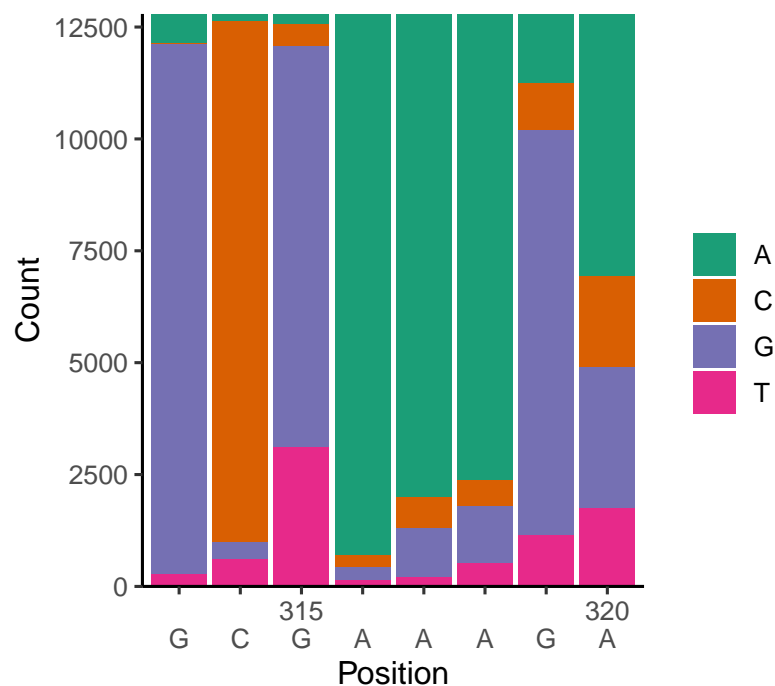
Gene IGHV3-54*02_G170C



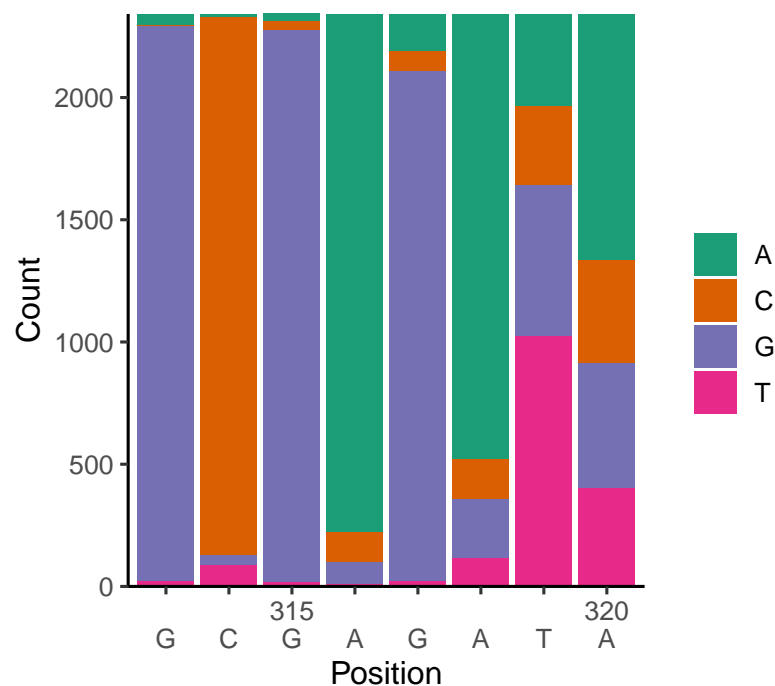
Gene IGHV4-147*01_G82T_G83A_A162



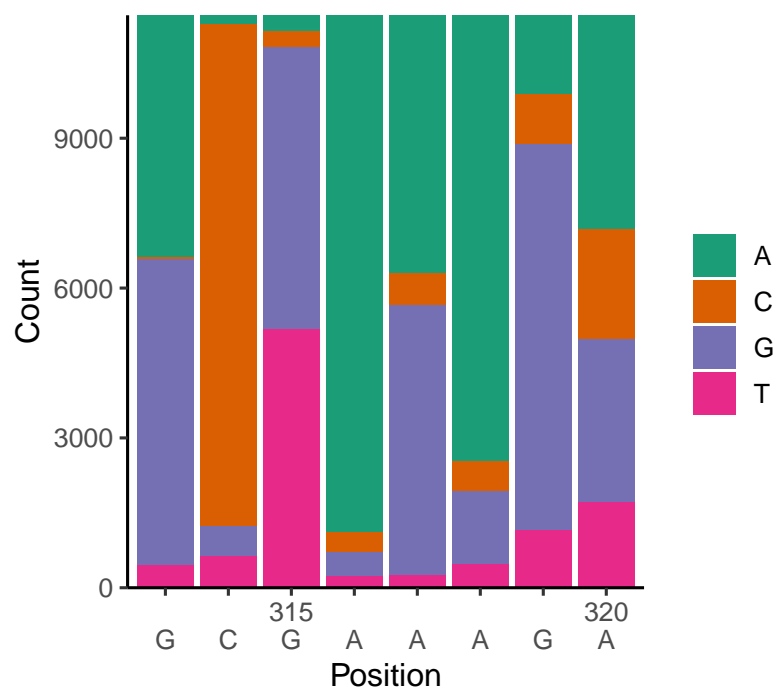
Gene IGHV3-103*01_T19A_G24A_C27



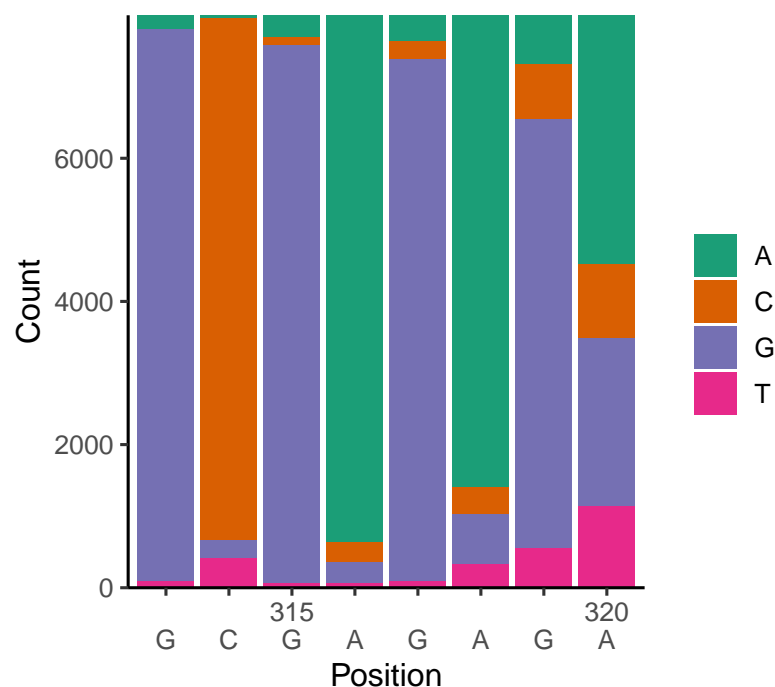
Gene IGHV4-80*01_C83G_A88T_T105C



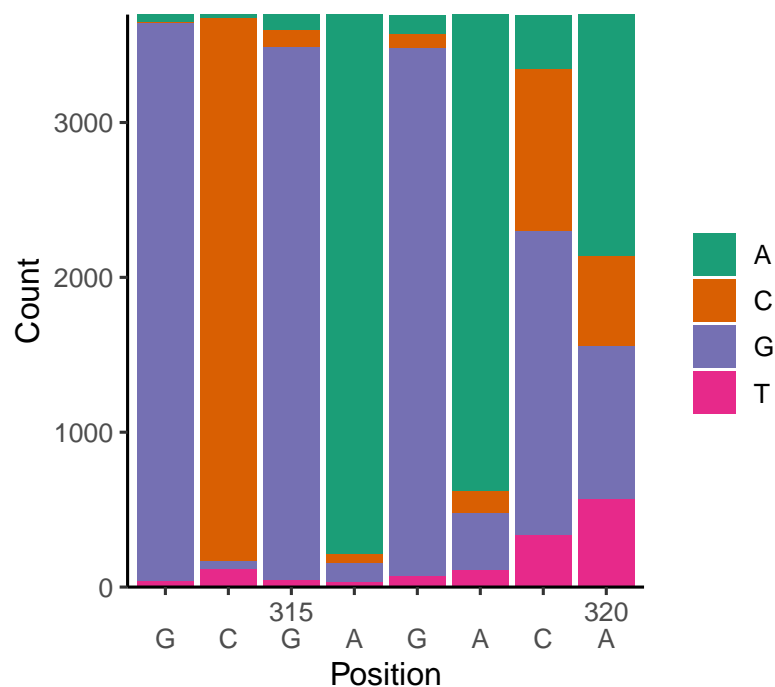
Gene IGHV3-103*01_G24A_C27A_C38'



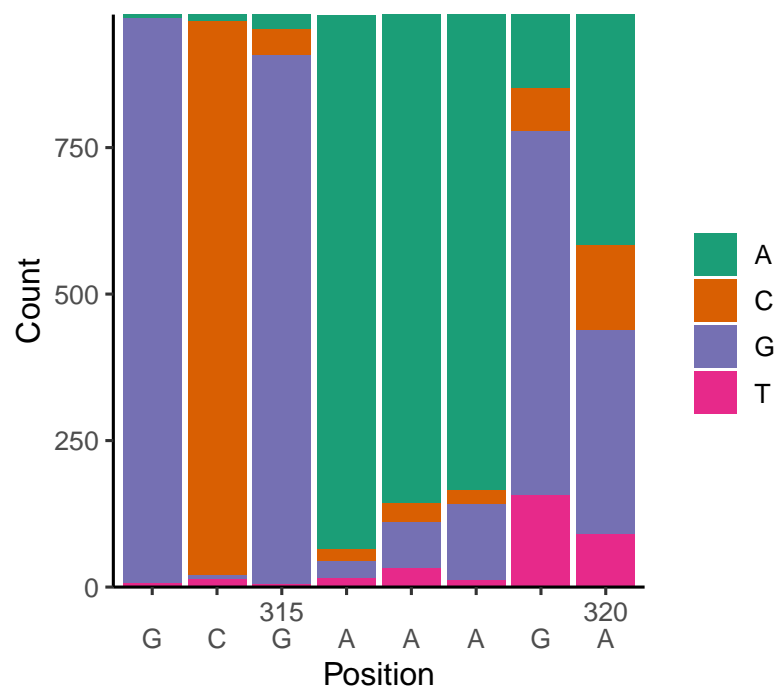
Gene IGHV4-173*01_C47T



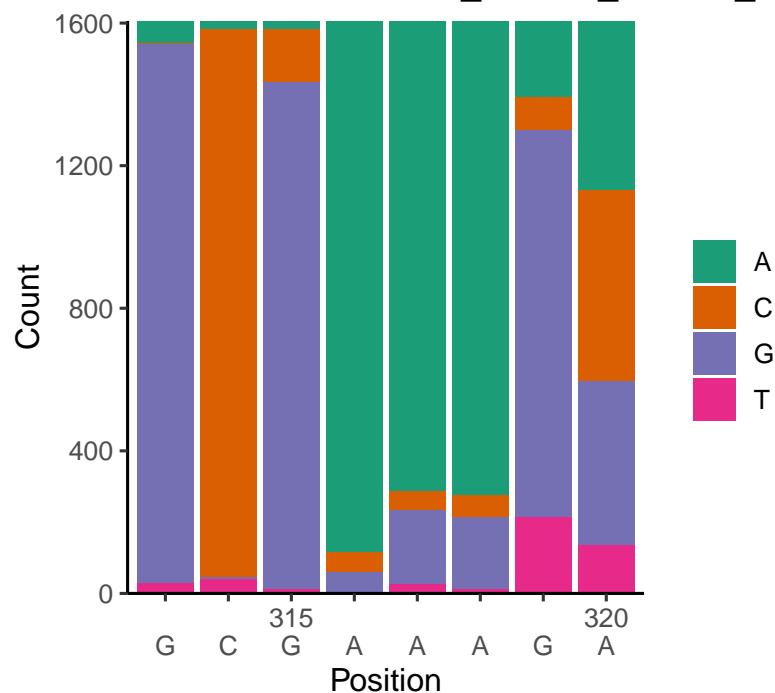
Gene IGHV4-65*01_G297C



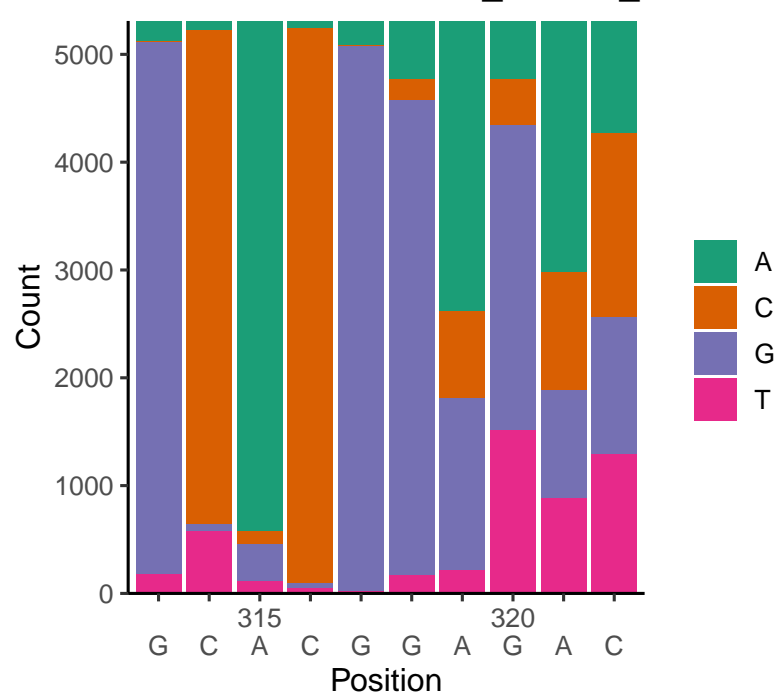
Gene IGHV5-20*02_A295T_C312T



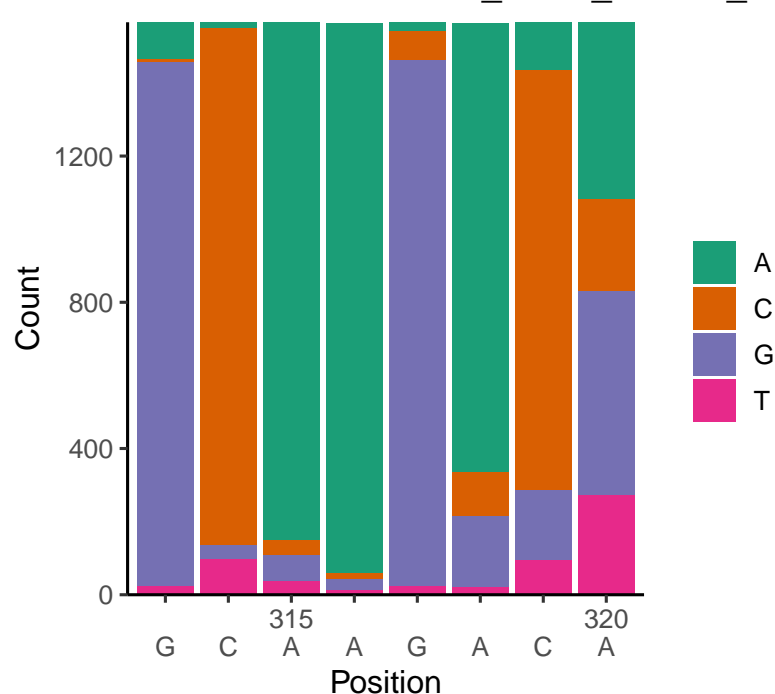
Gene IGHV5-20*02_A141G_G259A_C3



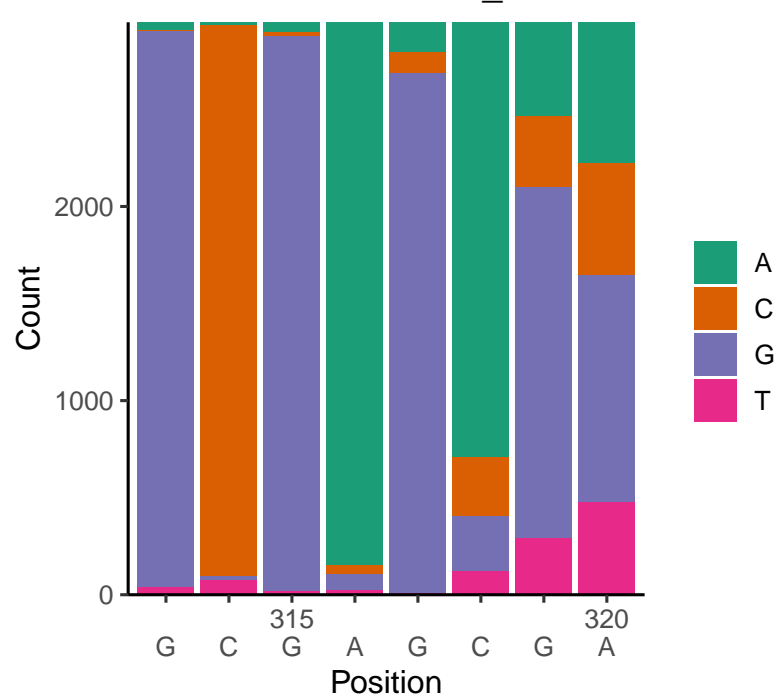
Gene IGHV2-174*02_A267G_A289G



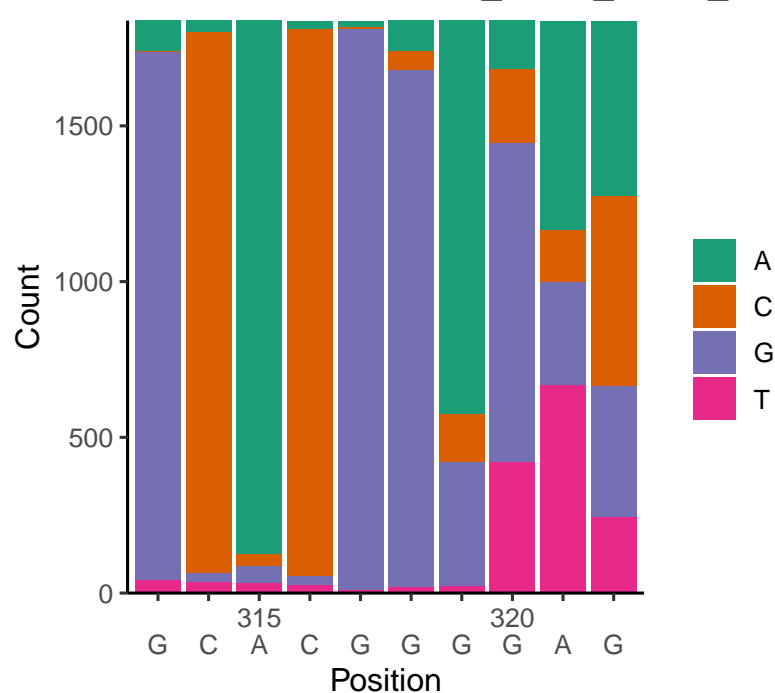
Gene IGHV7-114*01_T81A_G112T_G1'



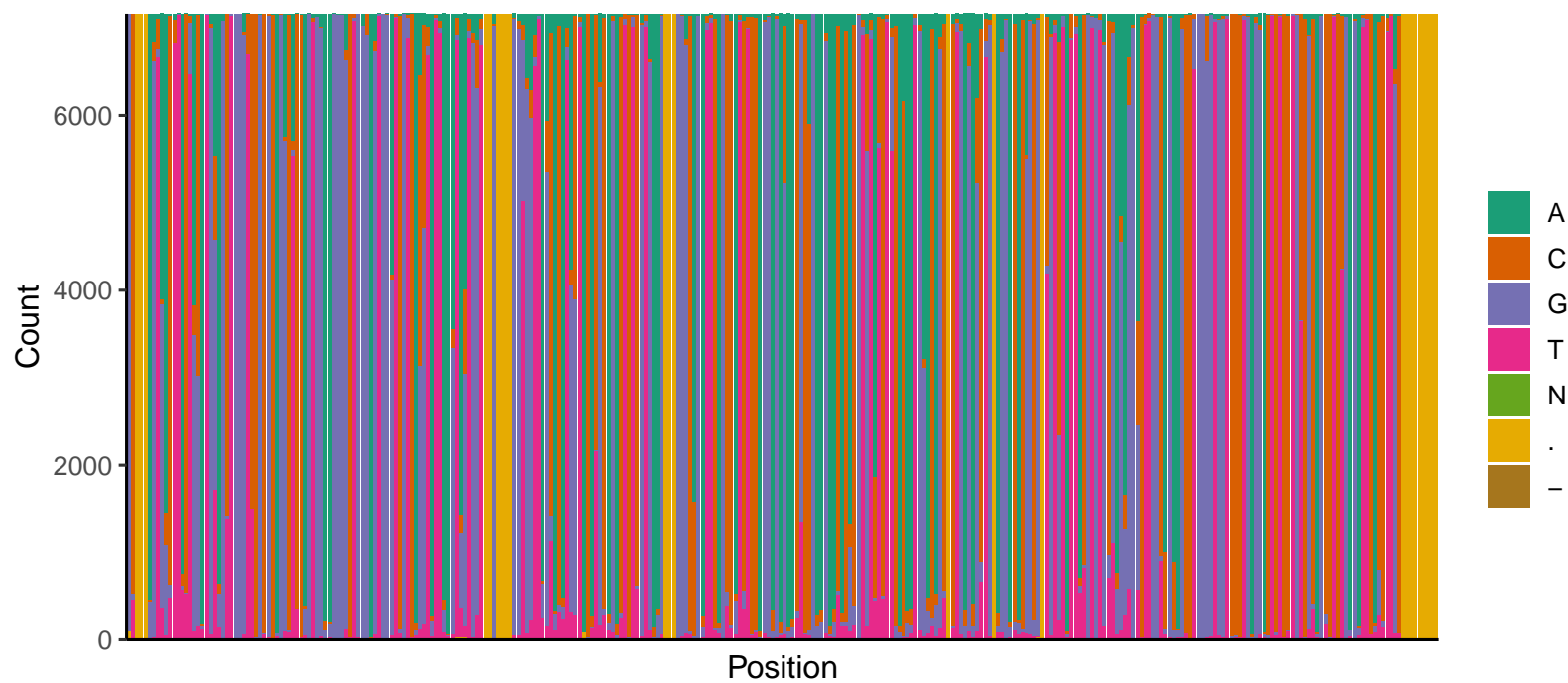
Gene IGHV4-169*02_C259T



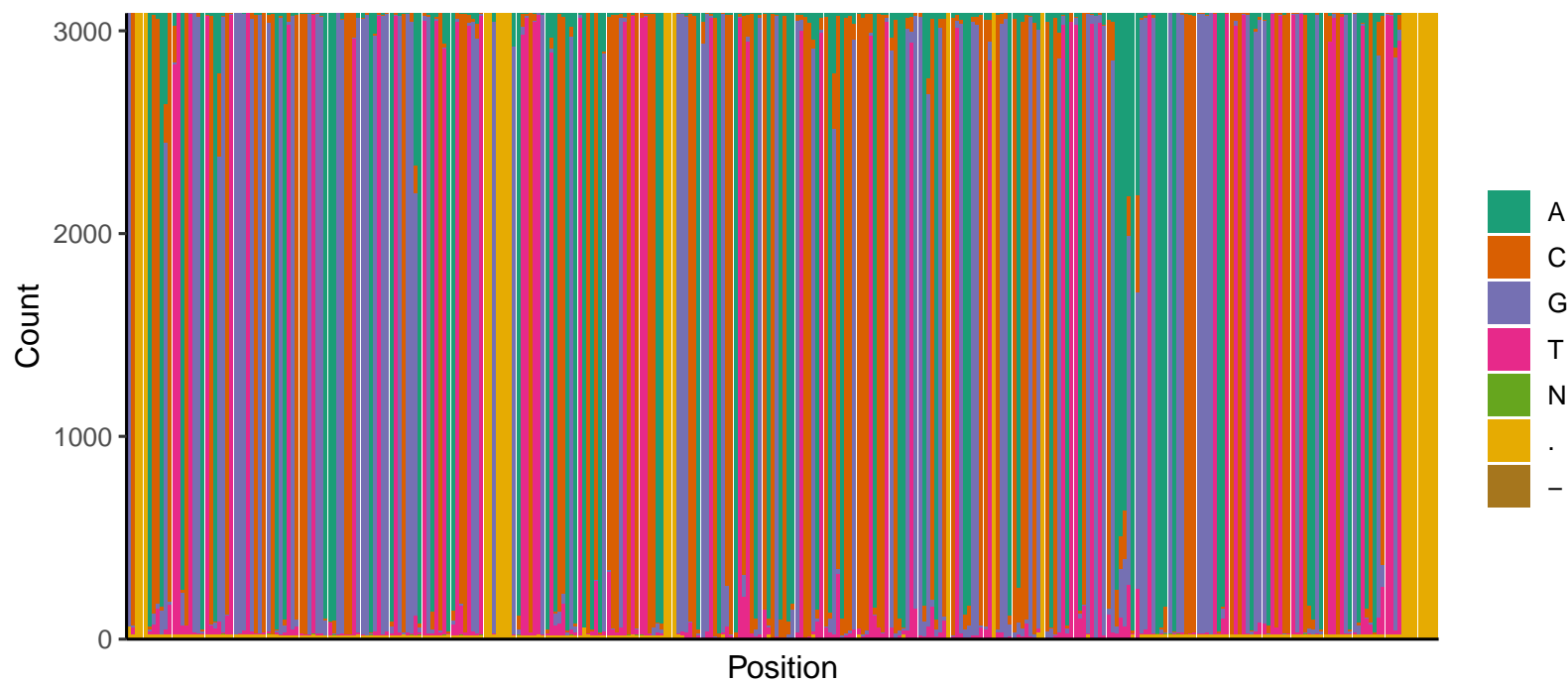
Gene IGHV2-161*01_C34T_A88C_A103T_G141A_A153G_T159G_A163C_T169G_G18



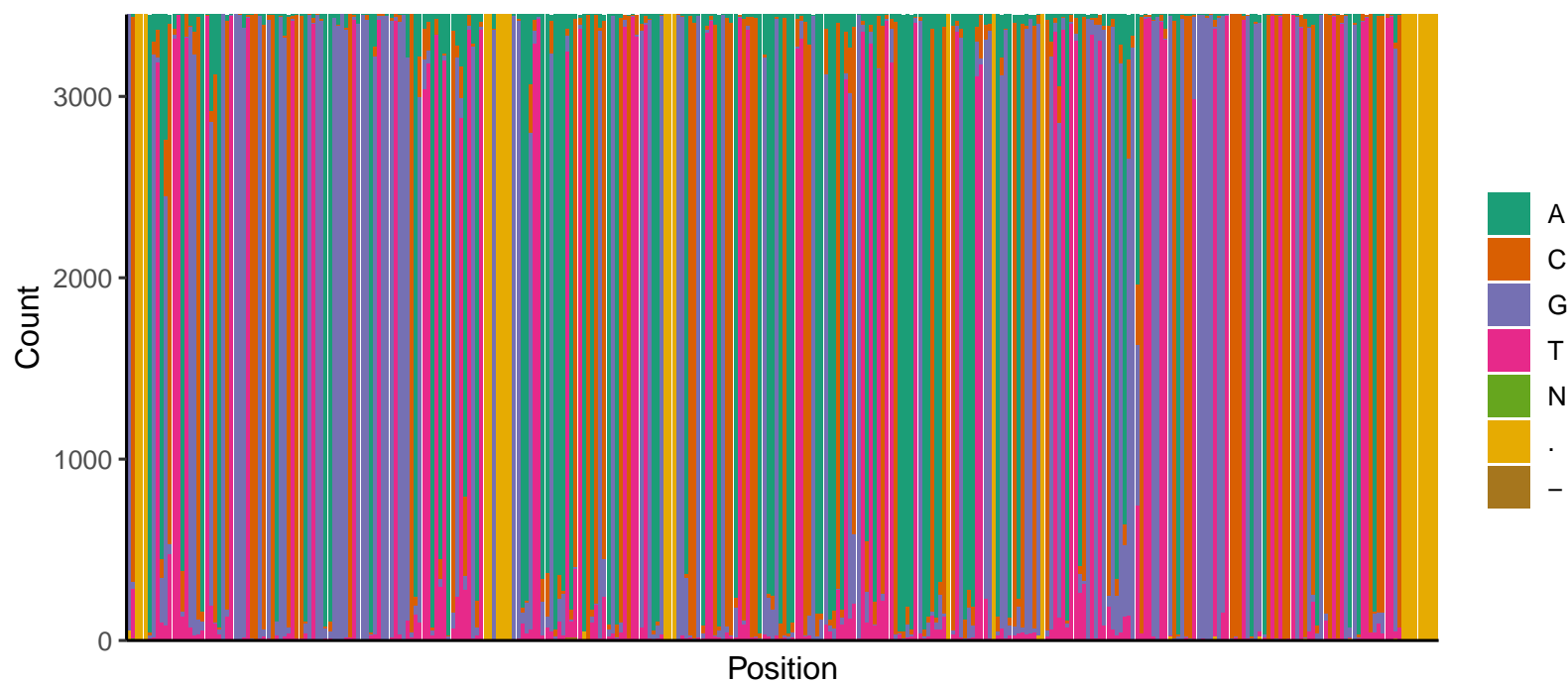
Gene IGHV3-28*02_C118T_C176G_A187G_G274A_G277A



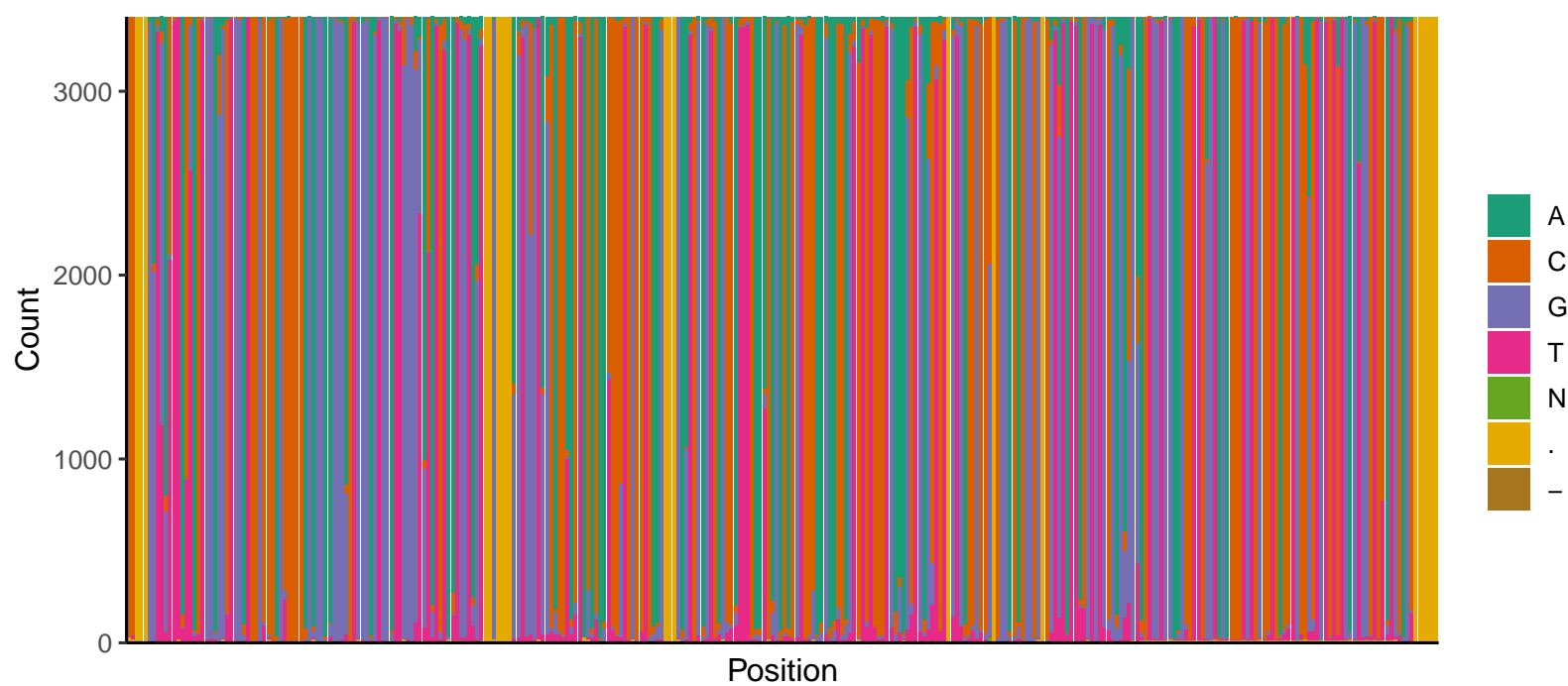
Gene IGHV5-43*01_A109T_G110A_G164T_C165G_A203G_C225G_T231C_A259G



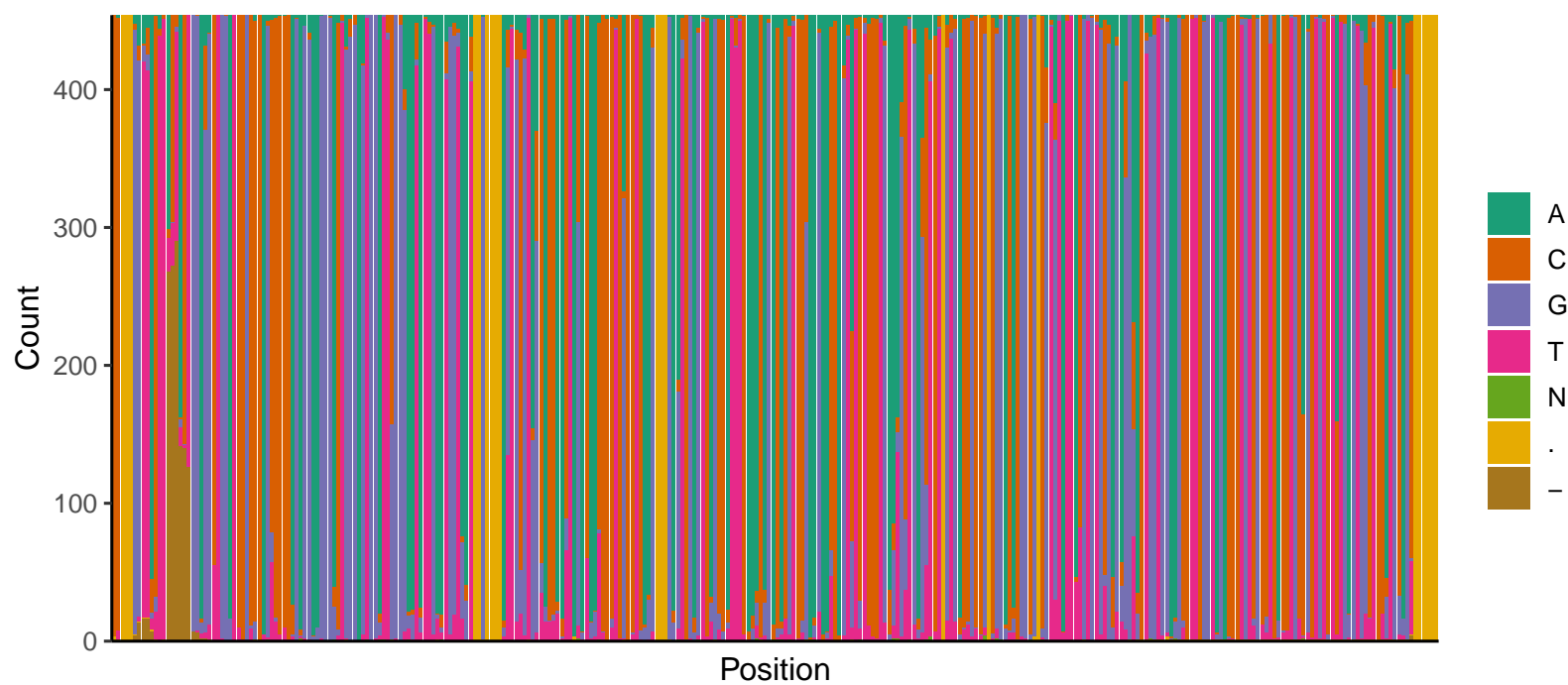
Gene IGHV3-54*02_G170C



Gene IGHV4-73*01_G147A



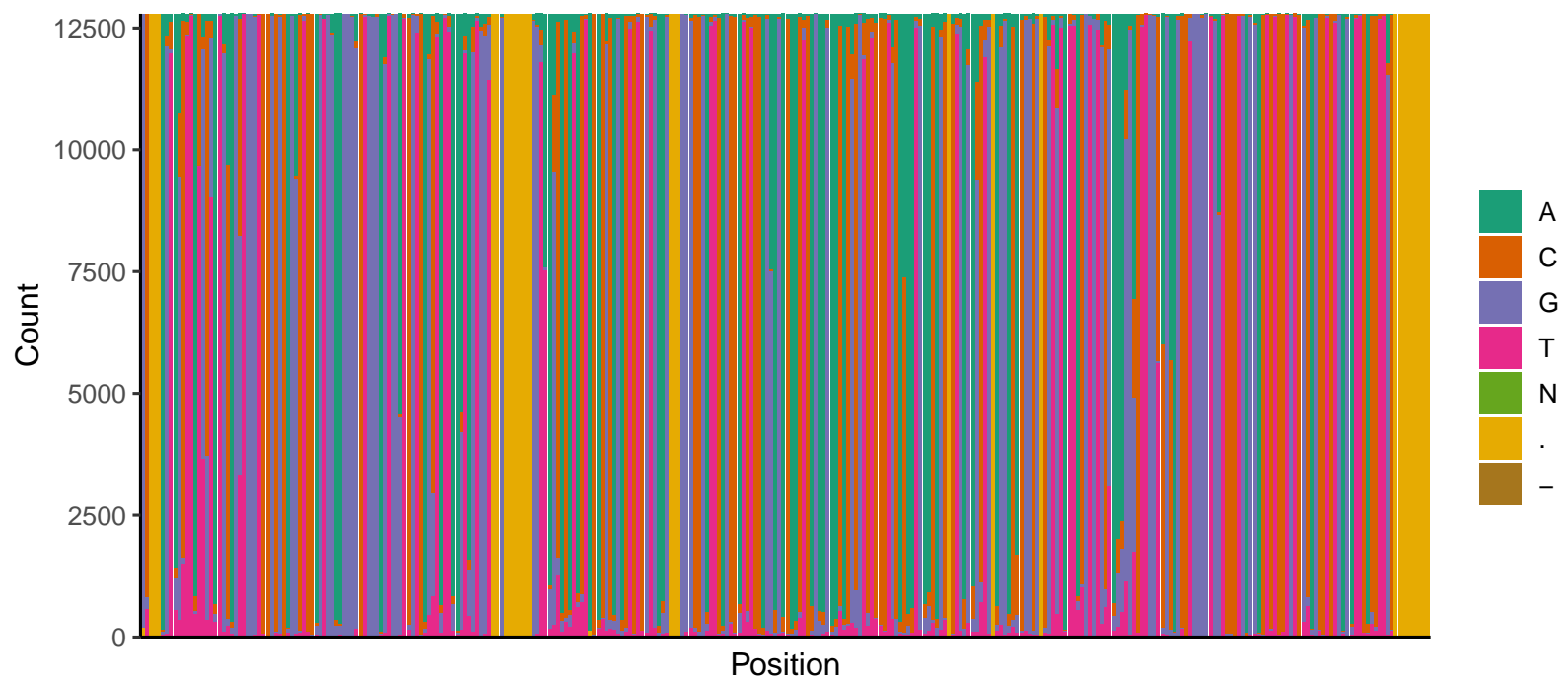
Gene IGHV4-73*01_G147A_T163A_C168T_T169G



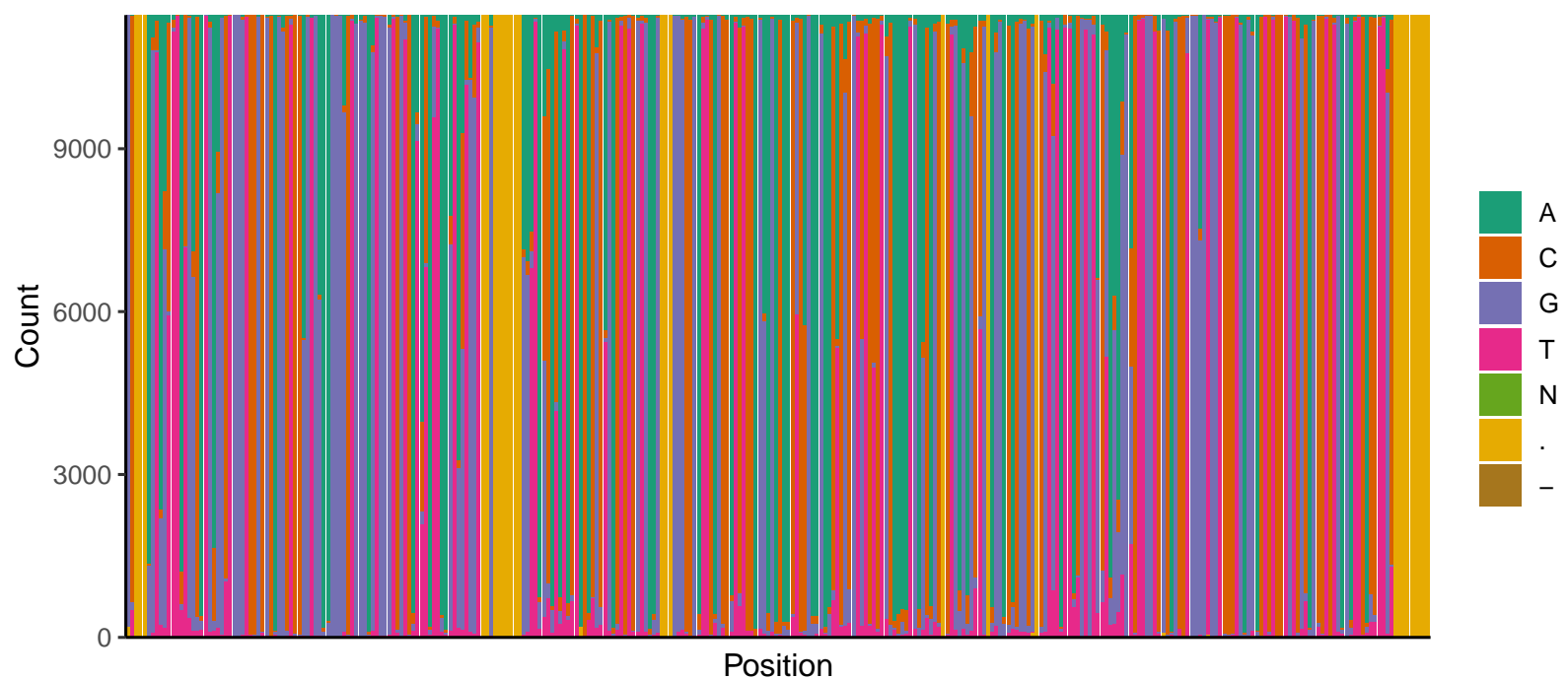
Gene IGHV4-147*01_G82T_G83A_A162G_C163T_G164A_A196T_G197A_C215A_G29



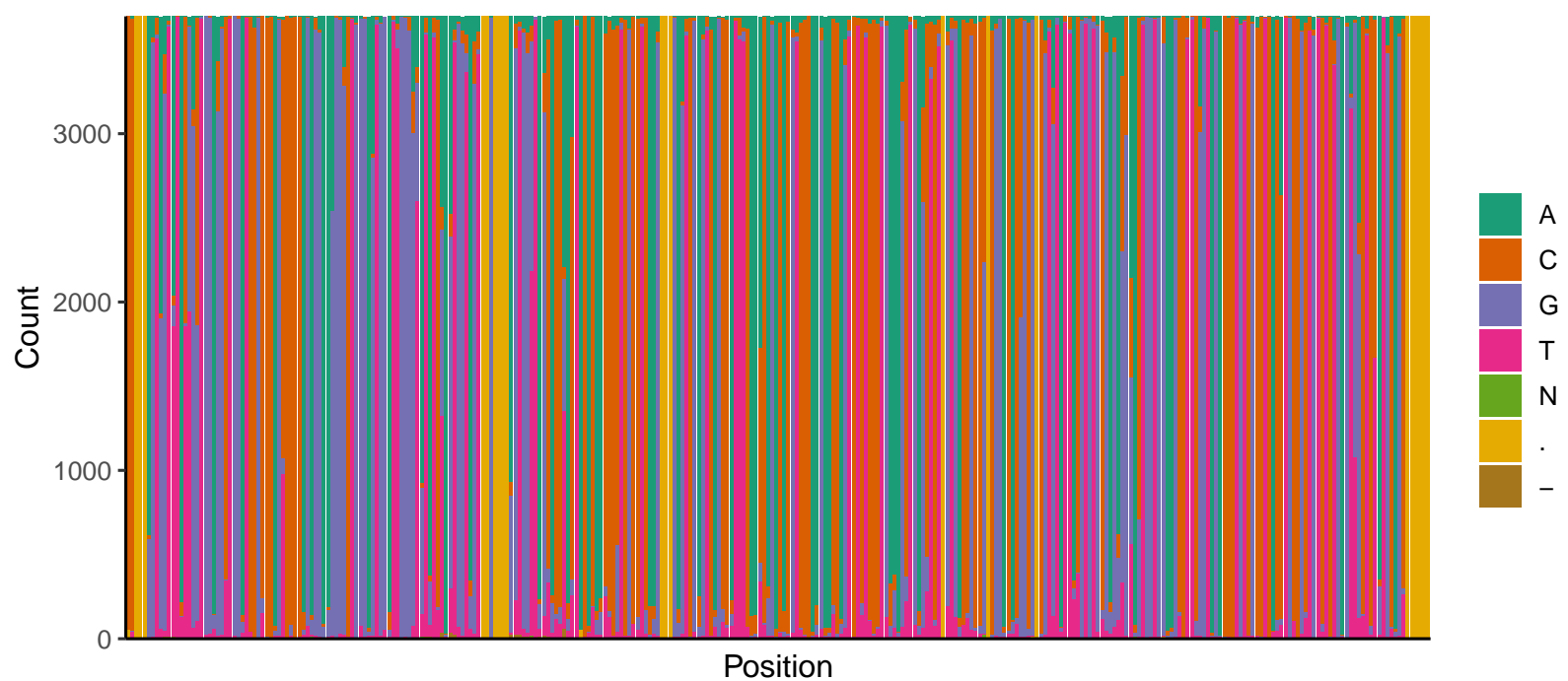
Gene IGHV3-103*01_T19A_G24A_C27A_C38T_A39C_A40C_C120G_G157A



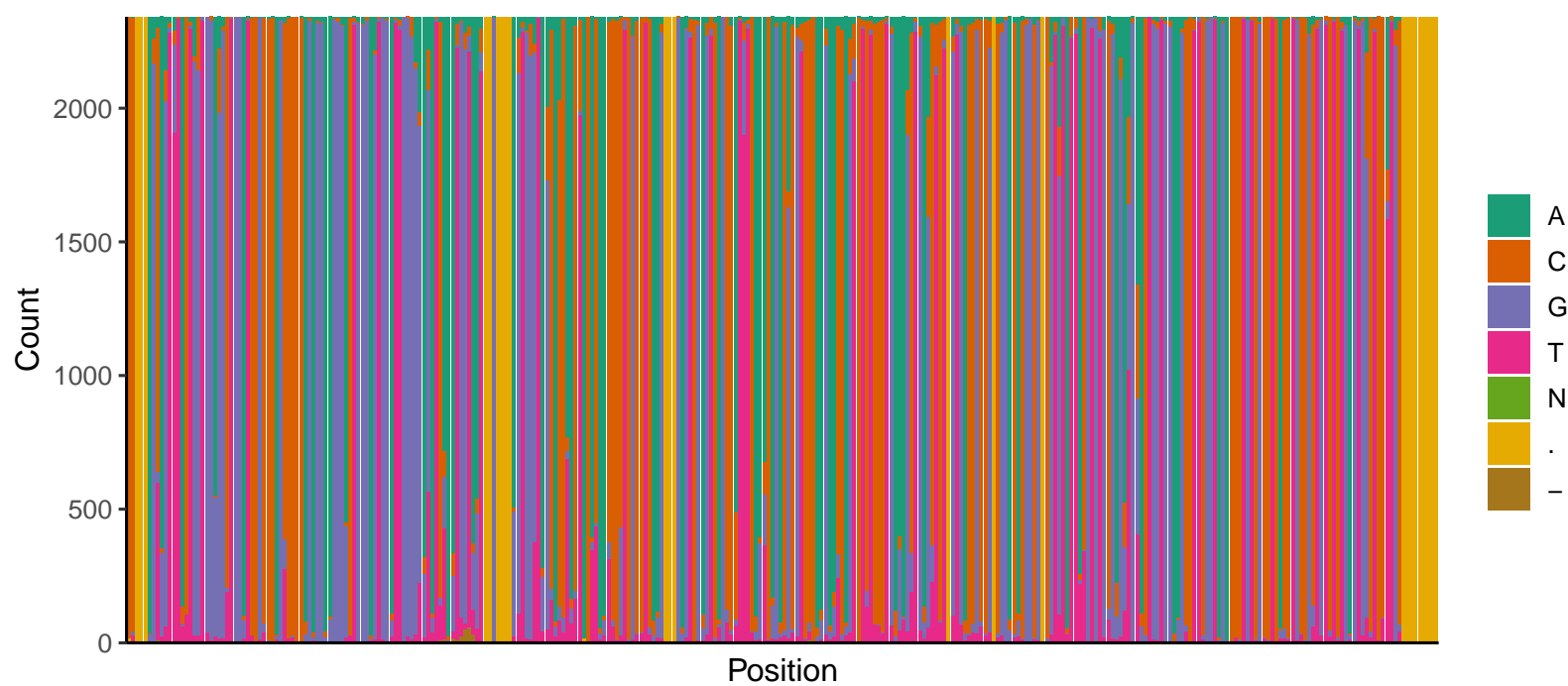
Gene IGHV3-103*01_G24A_C27A_C38T_A39C_A40C_C113G_T114C_C118A_A119G



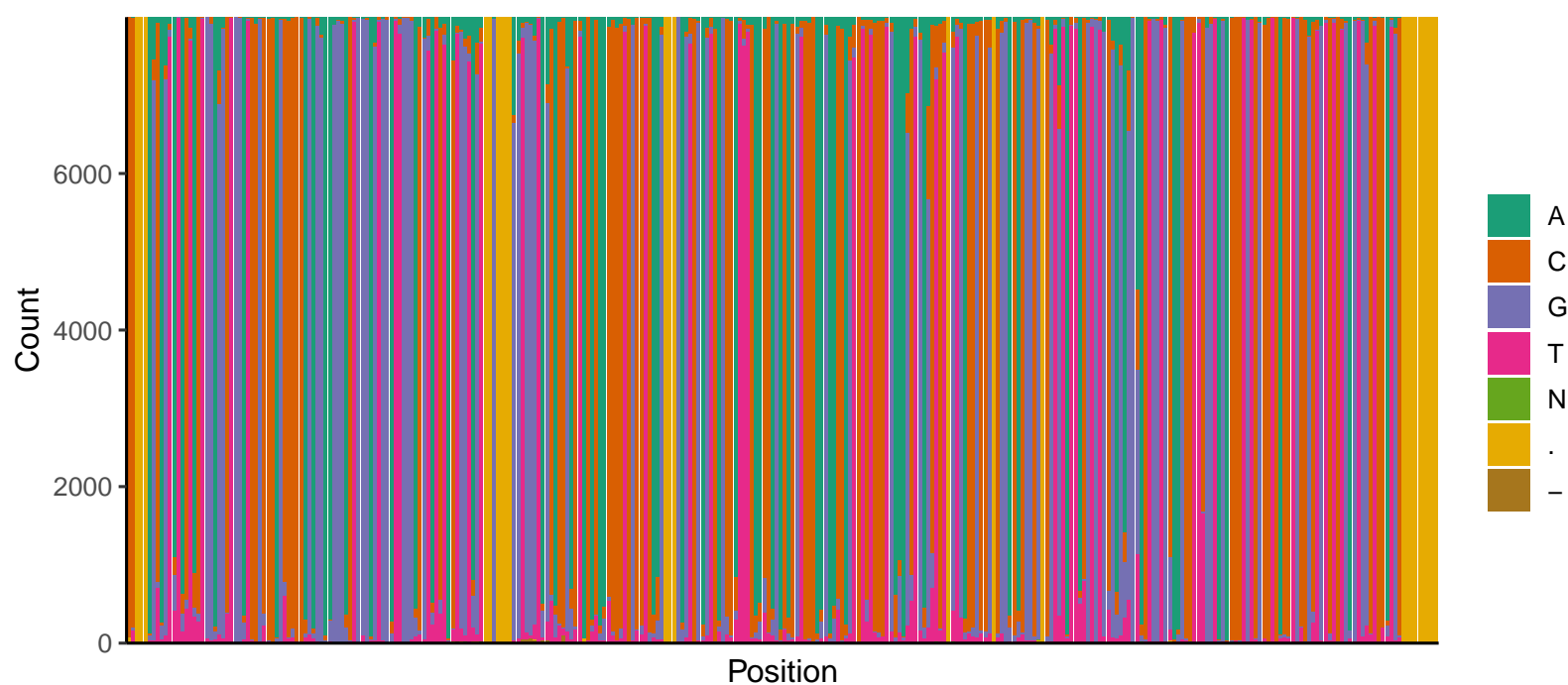
Gene IGHV4-65*01_G297C



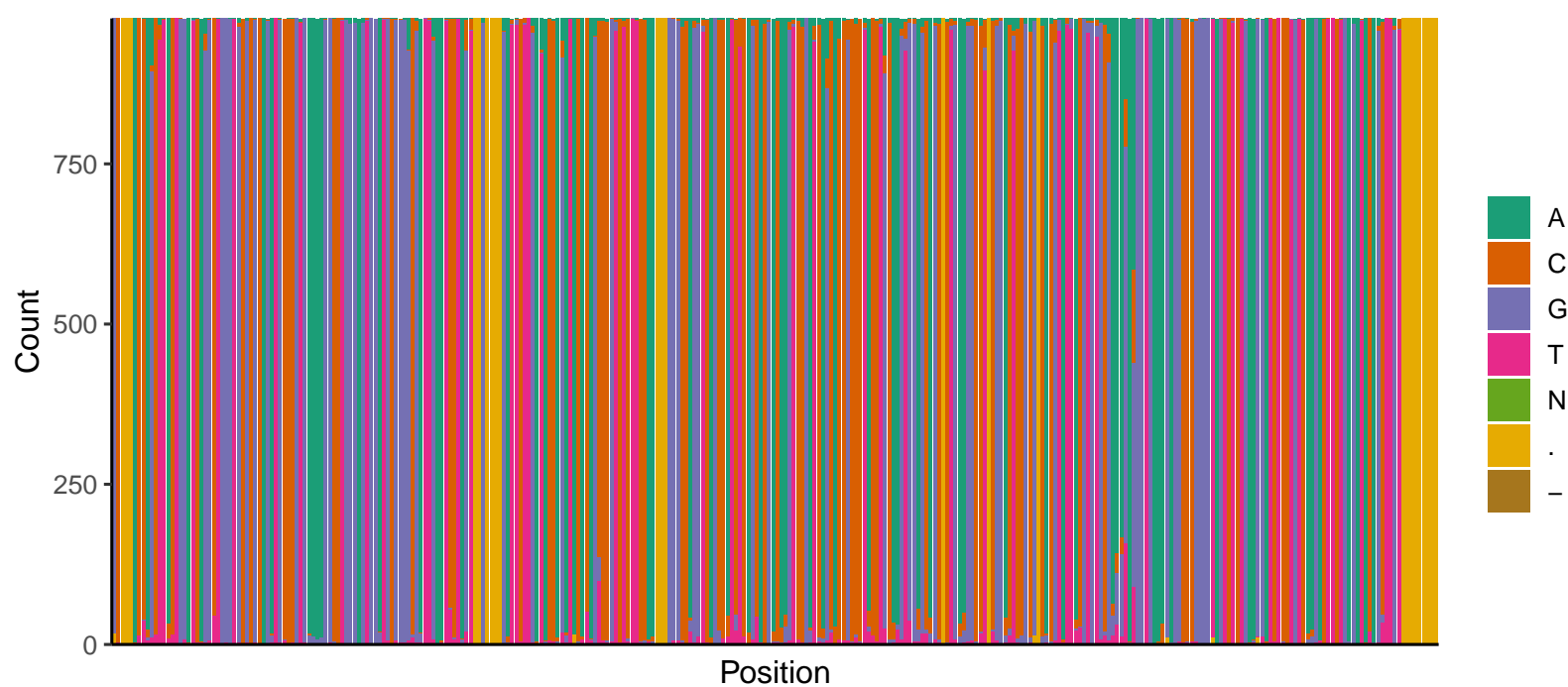
Gene IGHV4-80*01_C83G_A88T_T105C_T189G_T196A



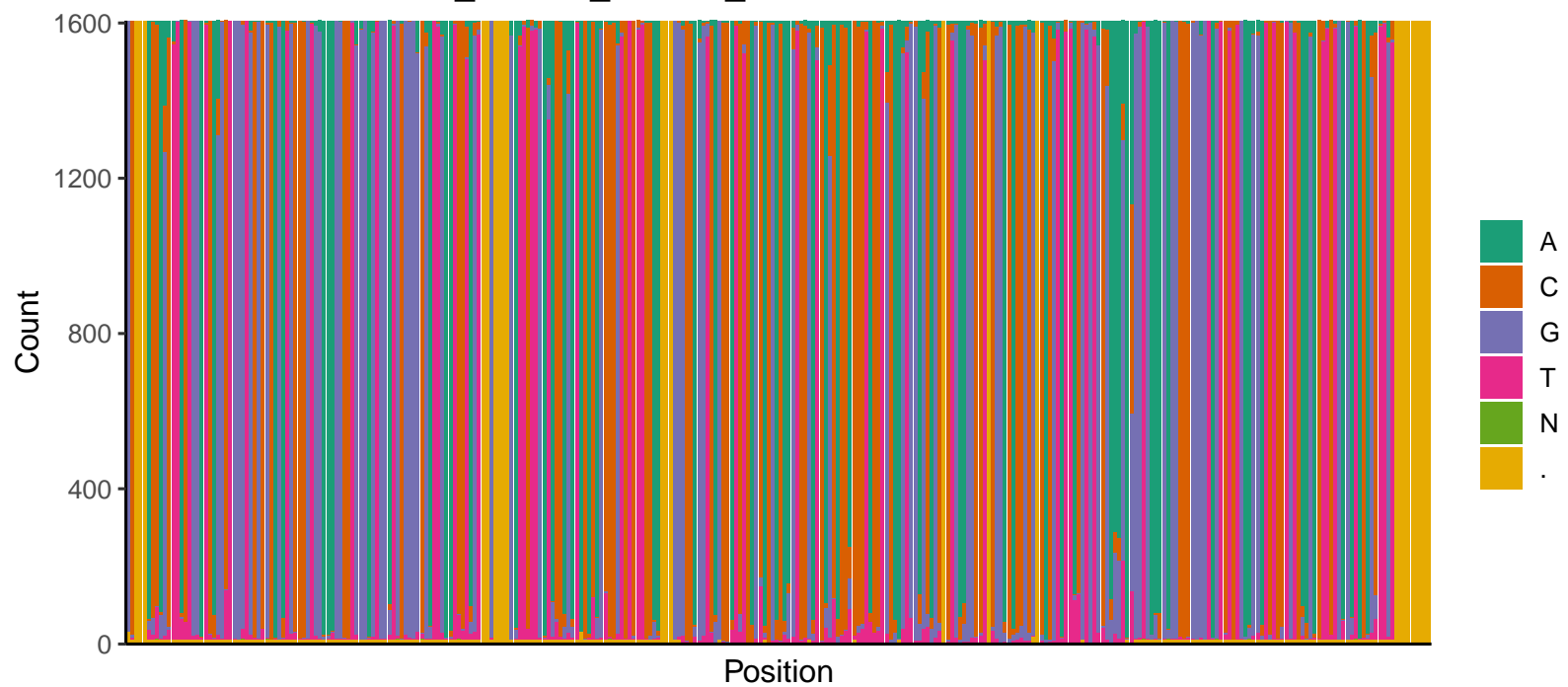
Gene IGHV4-173*01_C47T



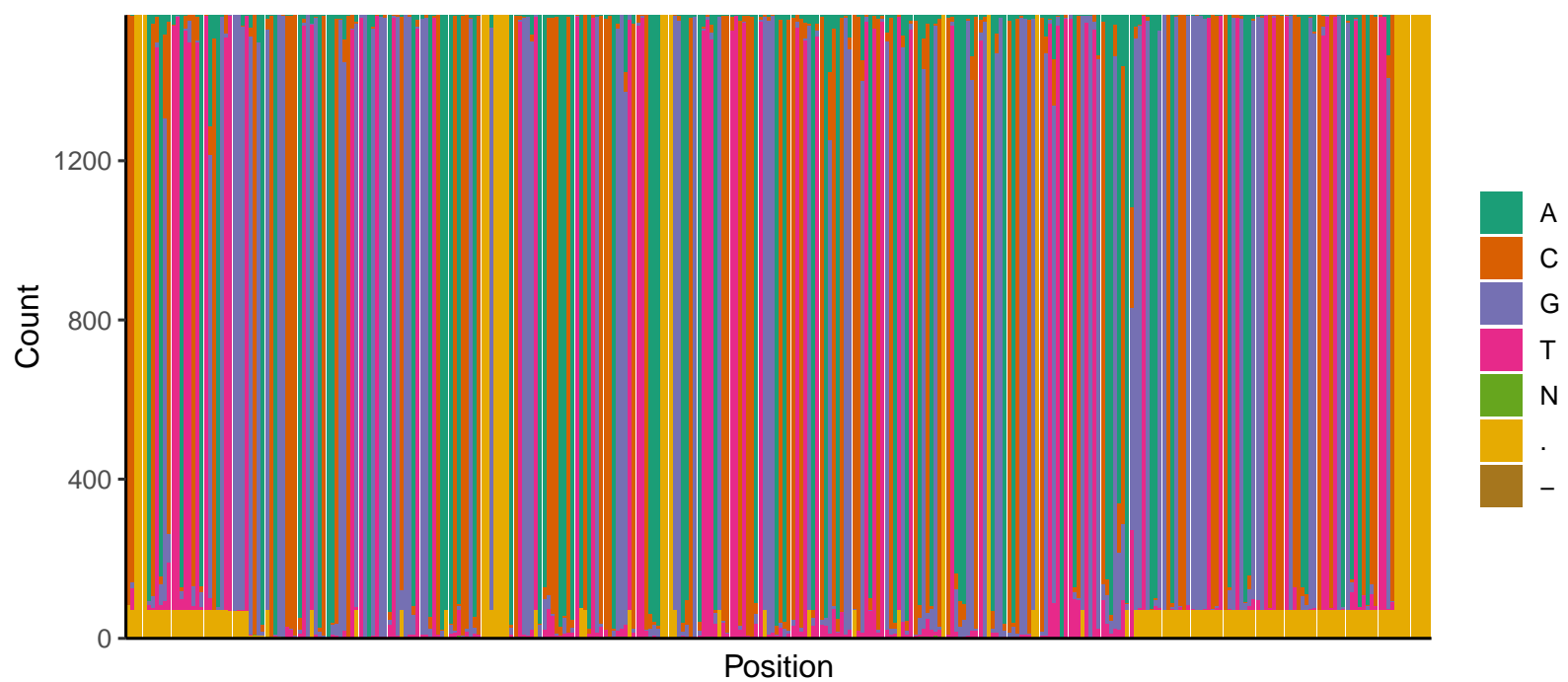
Gene IGHV5-20*02_A295T_C312T



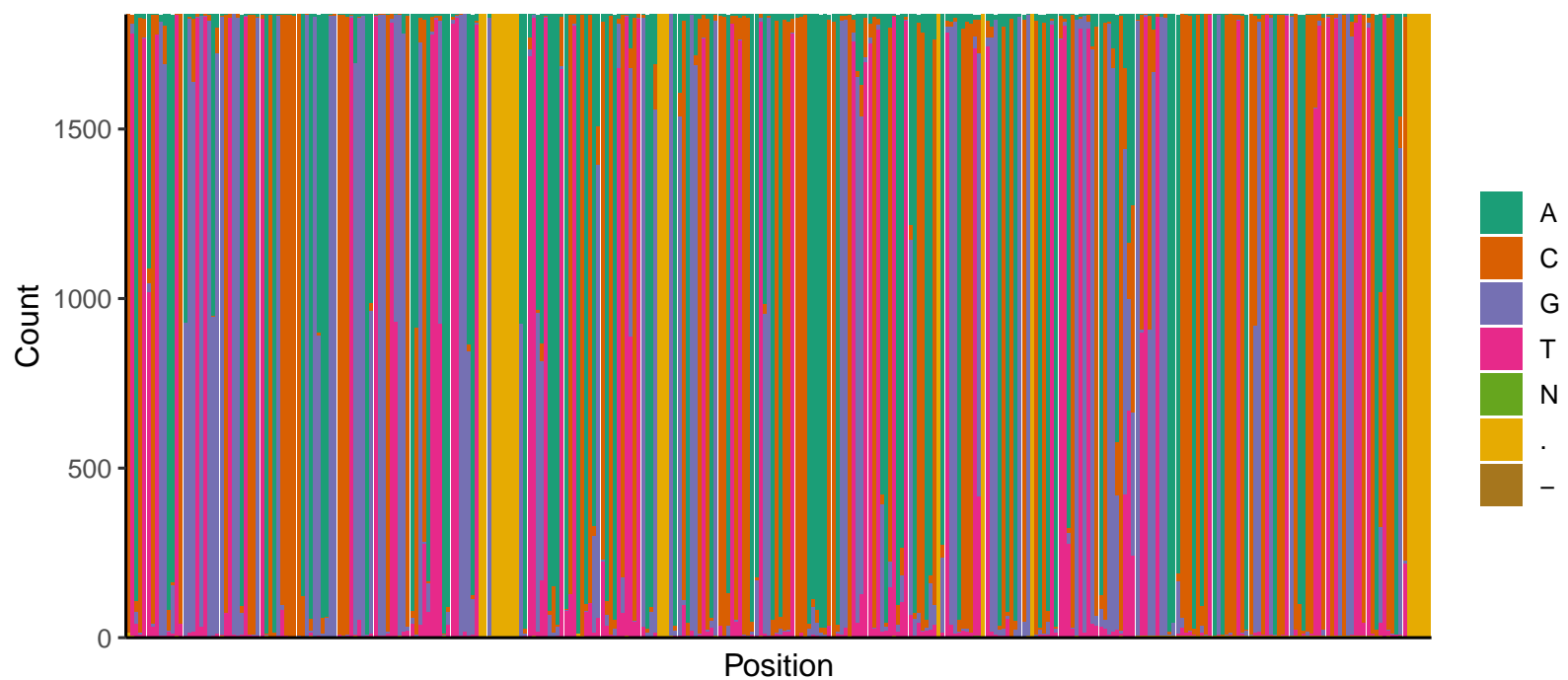
Gene IGHV5-20*02_A141G_G259A_C312T



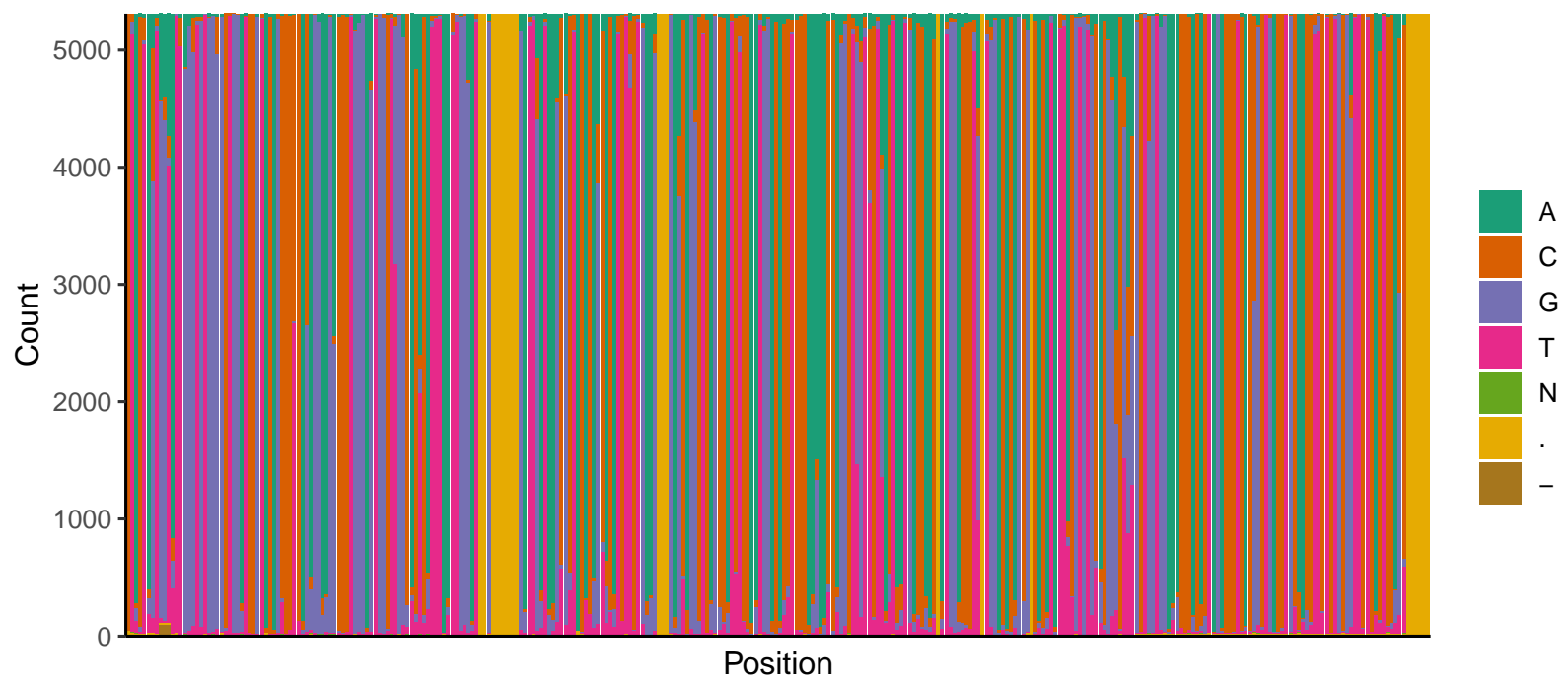
Gene IGHV7-114*01_T81A_G112T_G113C_A118C_A261G



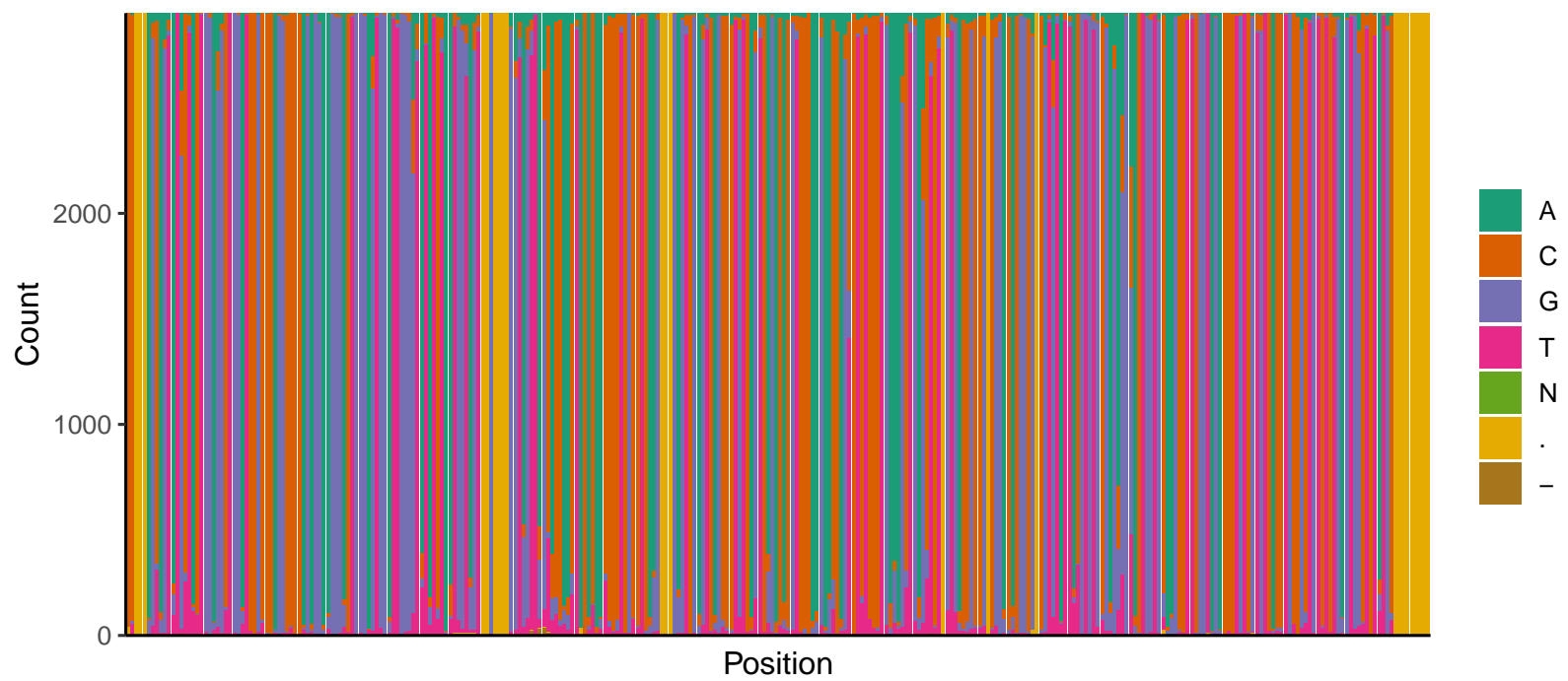
Gene IGHV2-161*01_C34T_A88C_A103T_G141A_A153G_T159G_A163C_T169G_G18



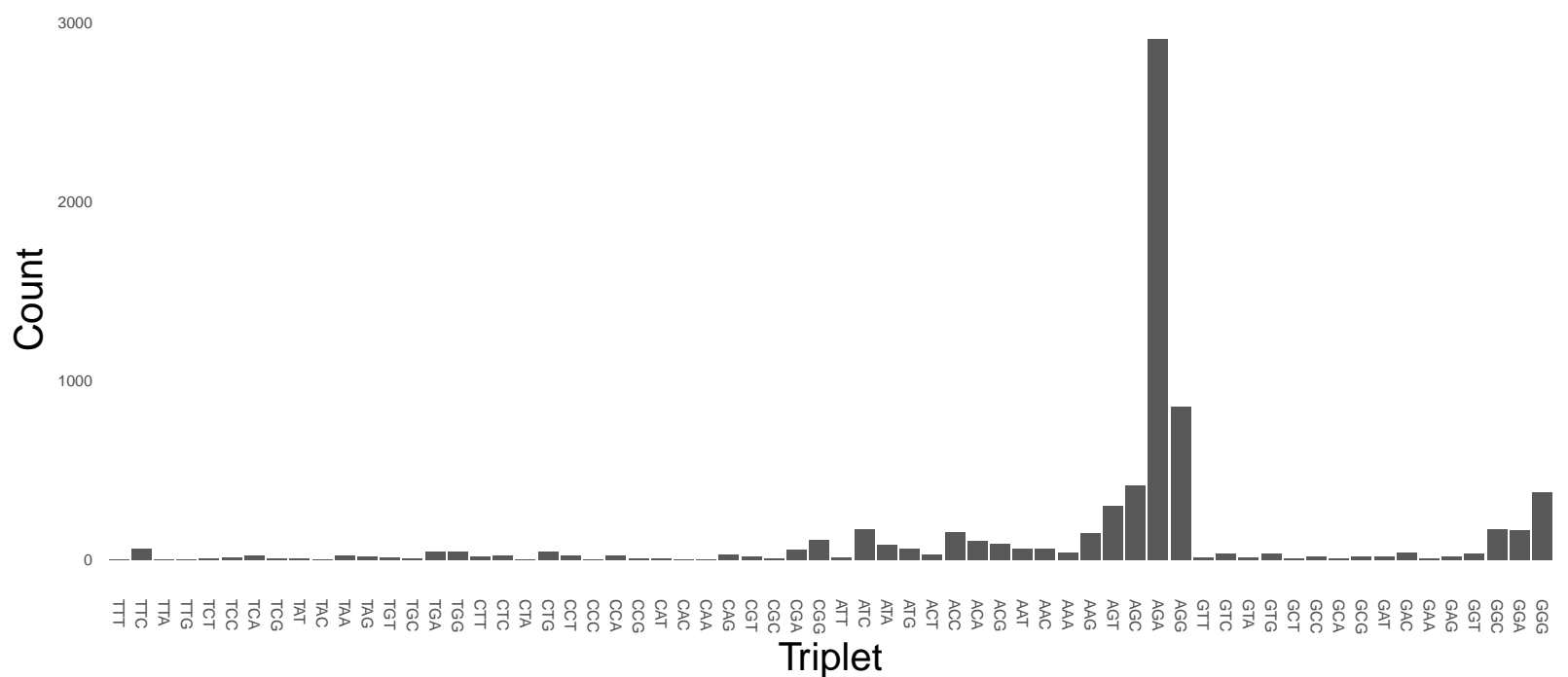
Gene IGHV2-174*02_A267G_A289G



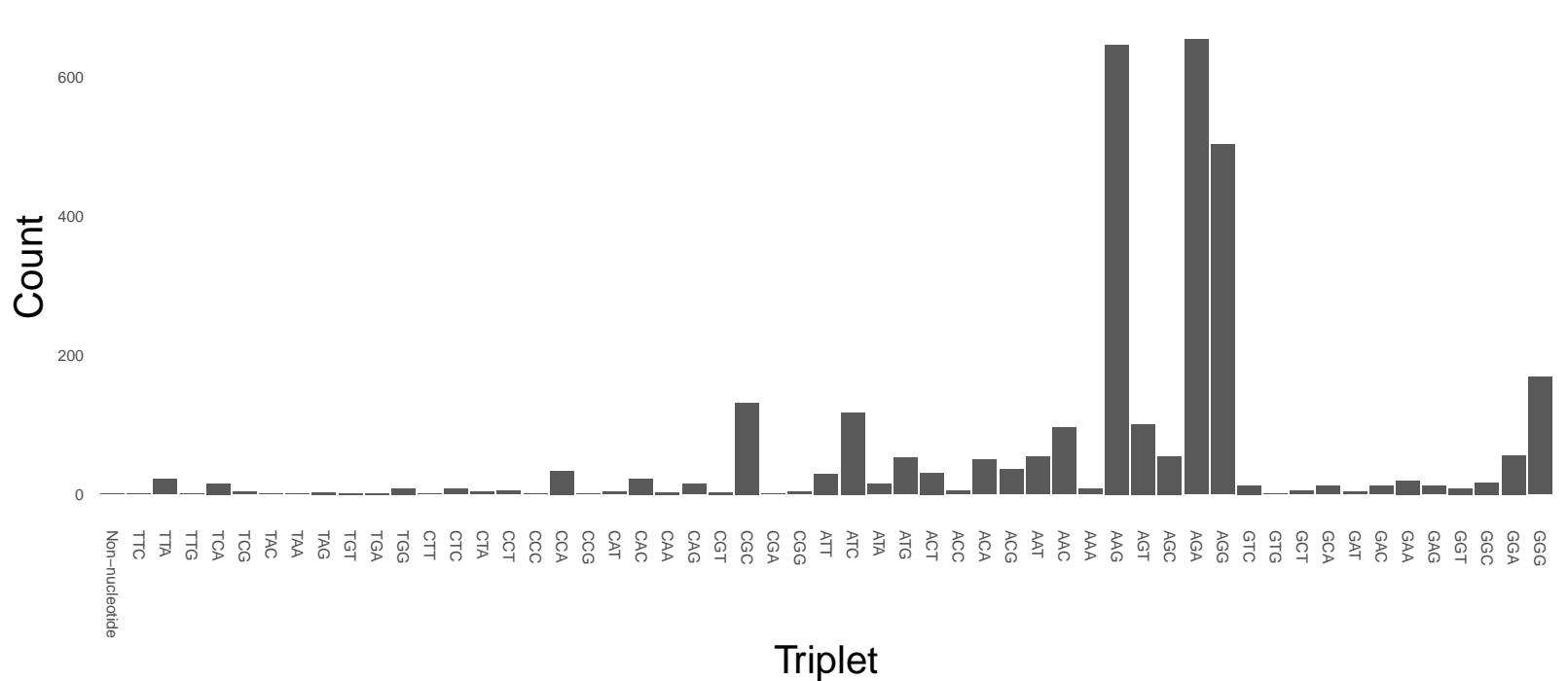
Gene IGHV4-169*02_C259T



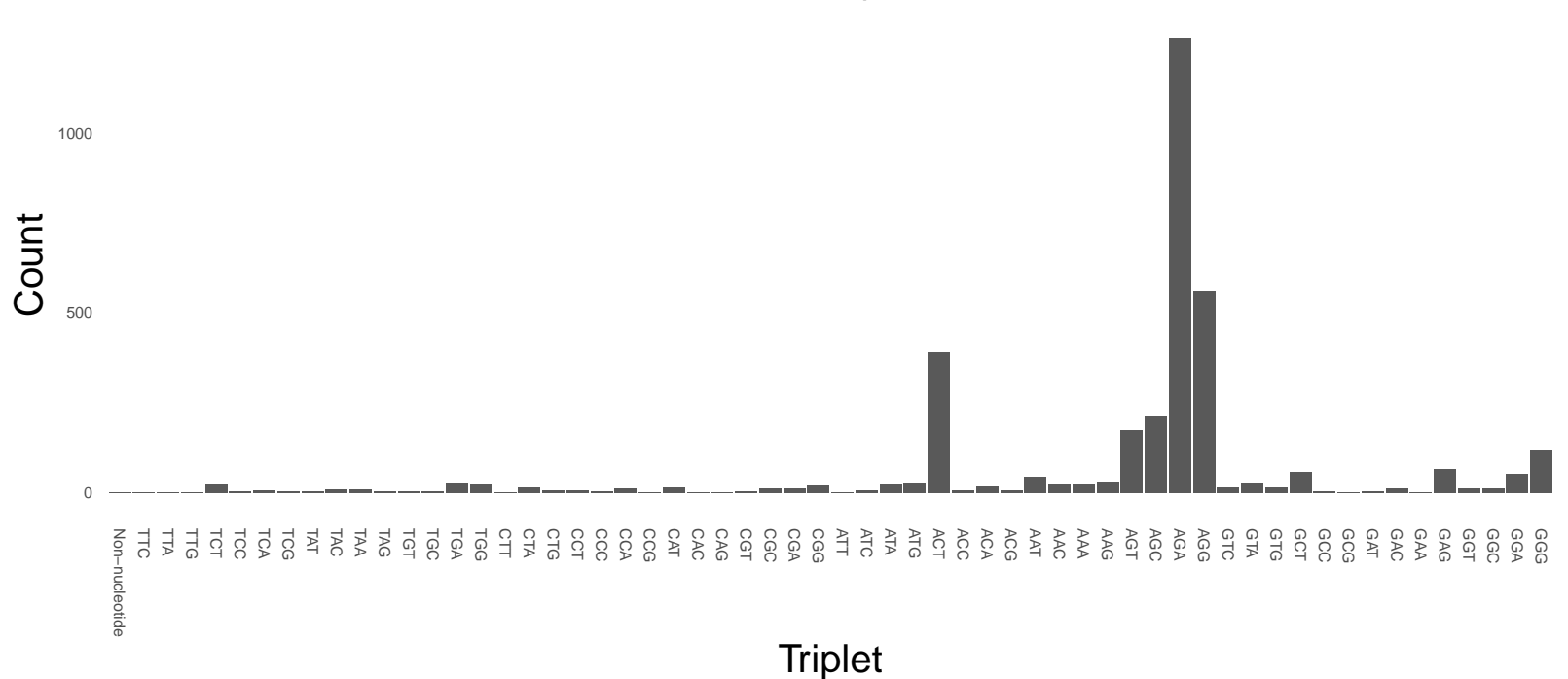
IGHV3-28*02_C118T_C176G_A187G_G274A_G277A- Final 3 nucleotides as a triplet



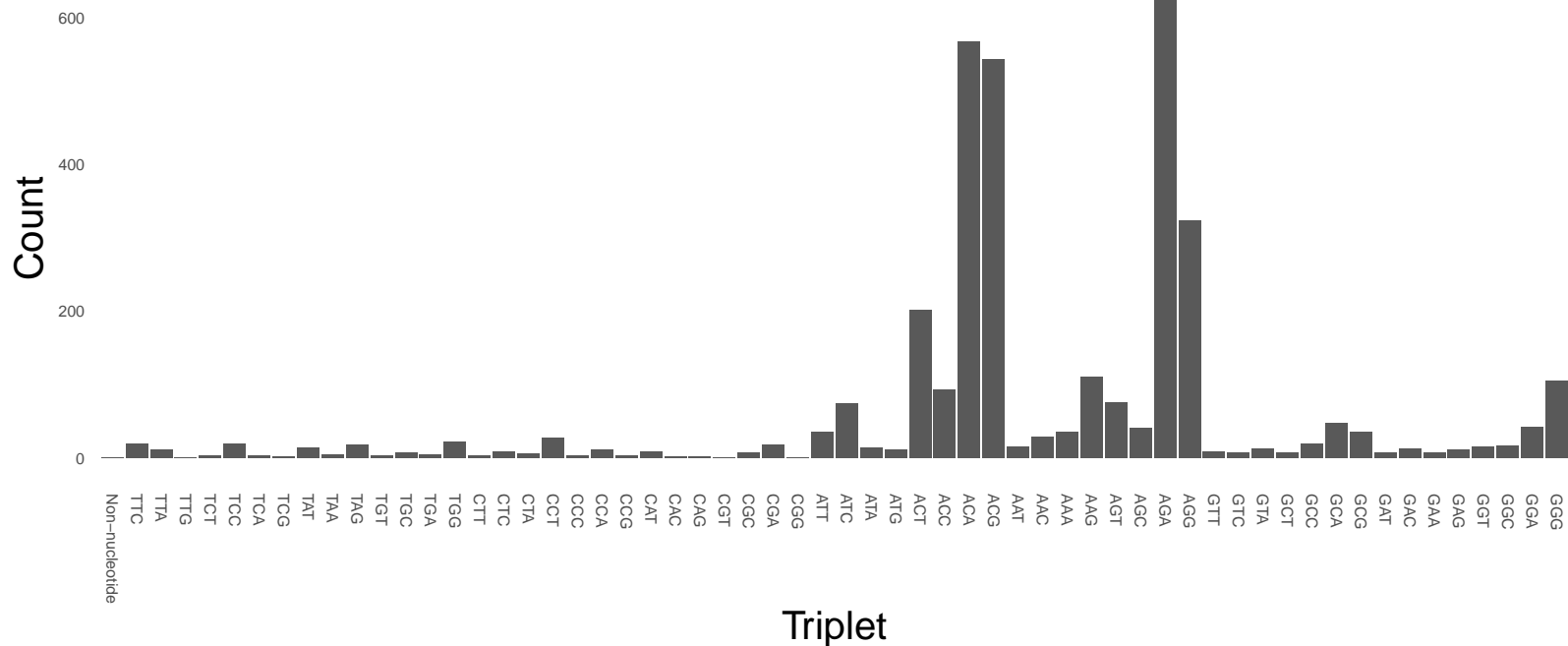
IGHV5-43*01_A109T_G110A_G164T_C165G_A203G_C225G_T231C_A259G- Final 3 nucleotides as a triplet



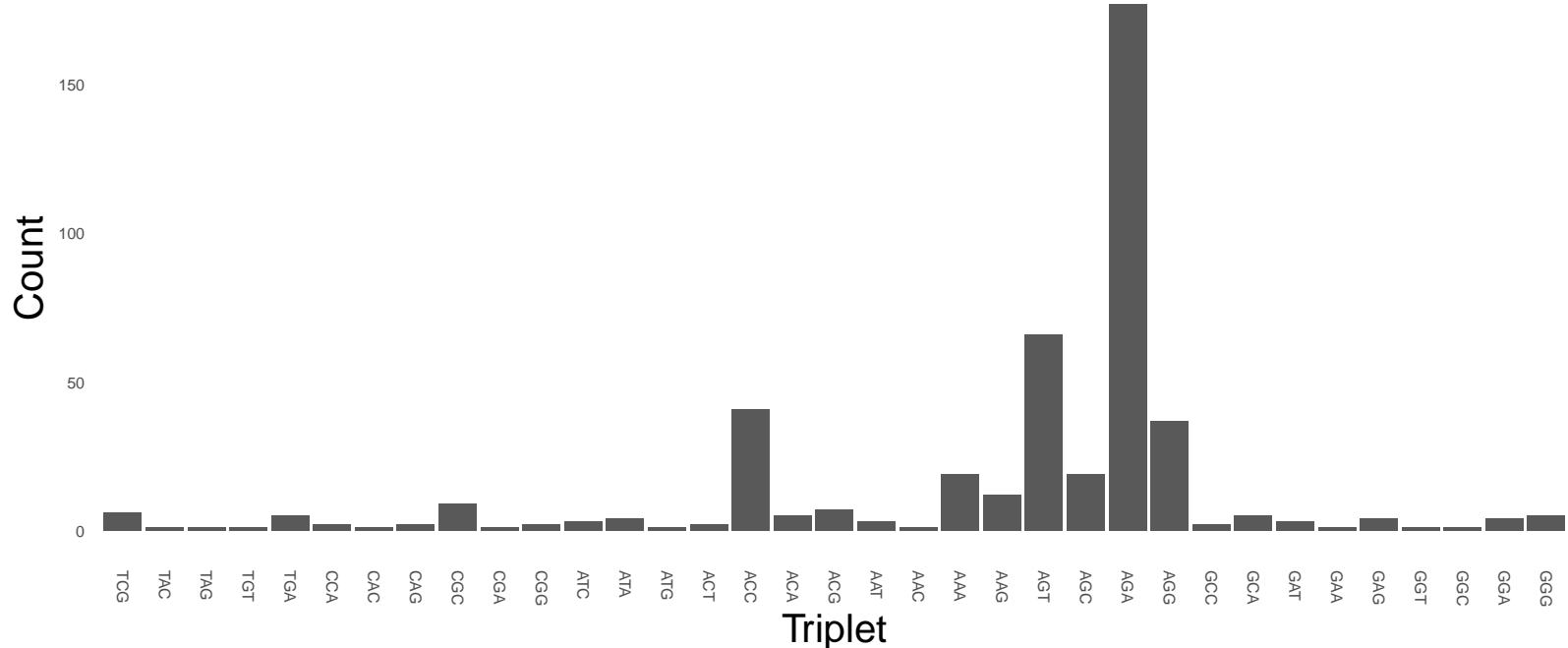
IGHV3-54*02_G170C- Final 3 nucleotides as a triplet



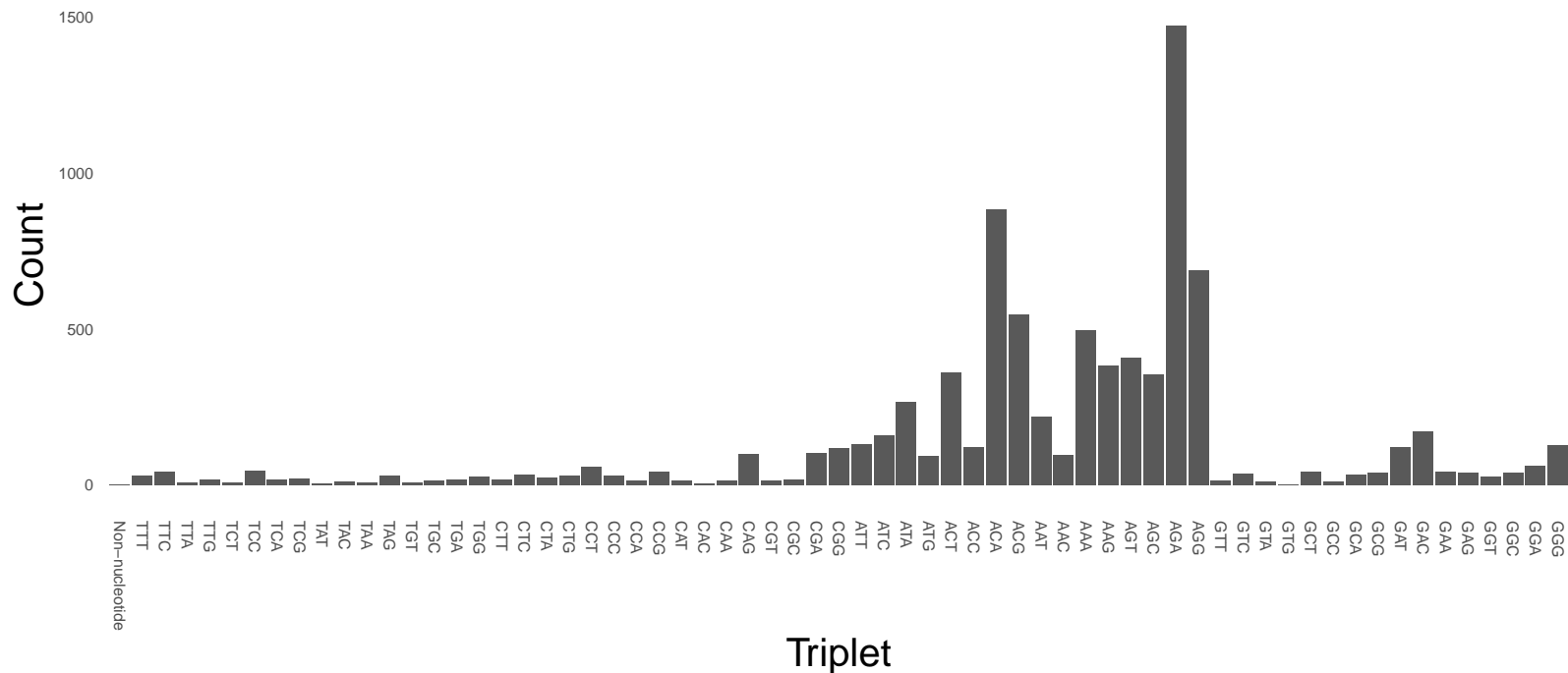
IGHV4-73*01_G147A- Final 3 nucleotides as a triplet



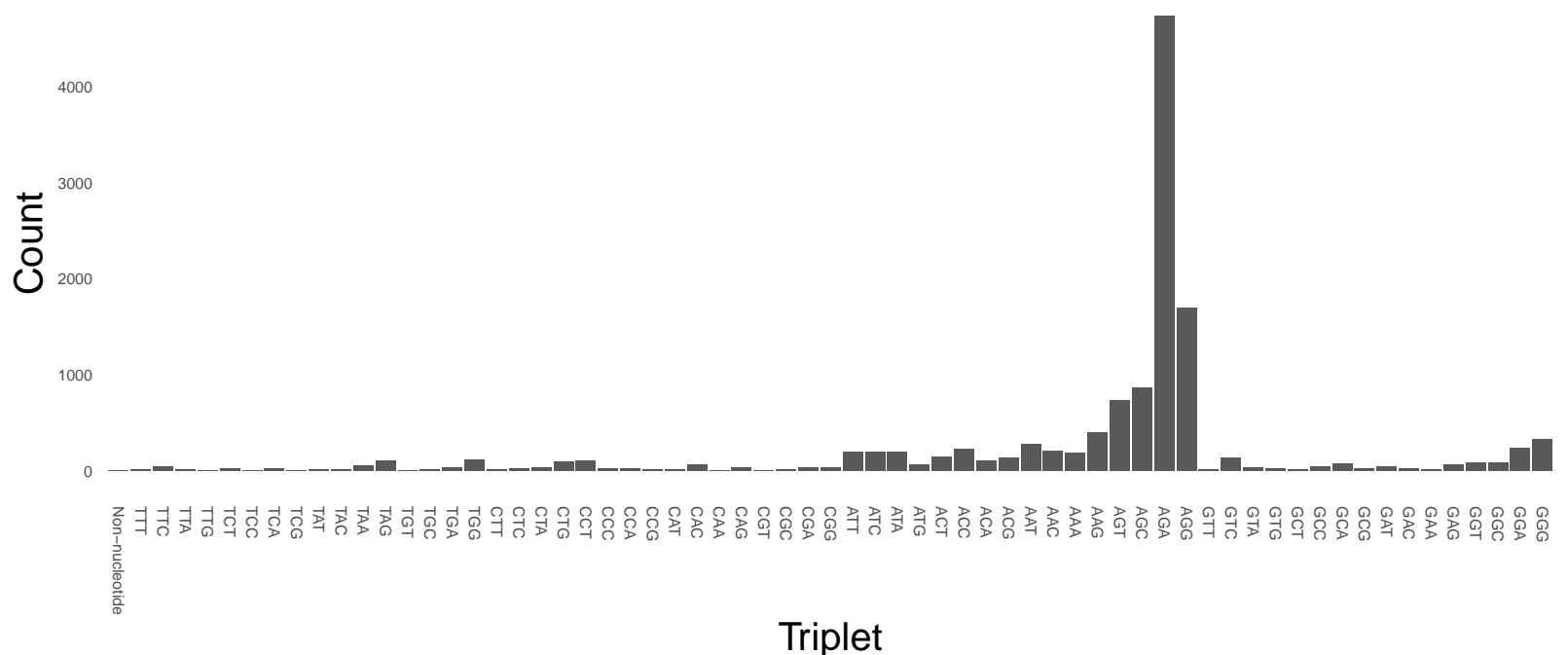
IGHV4-73*01_G147A_T163A_C168T_T169G- Final 3 nucleotides as a triplet



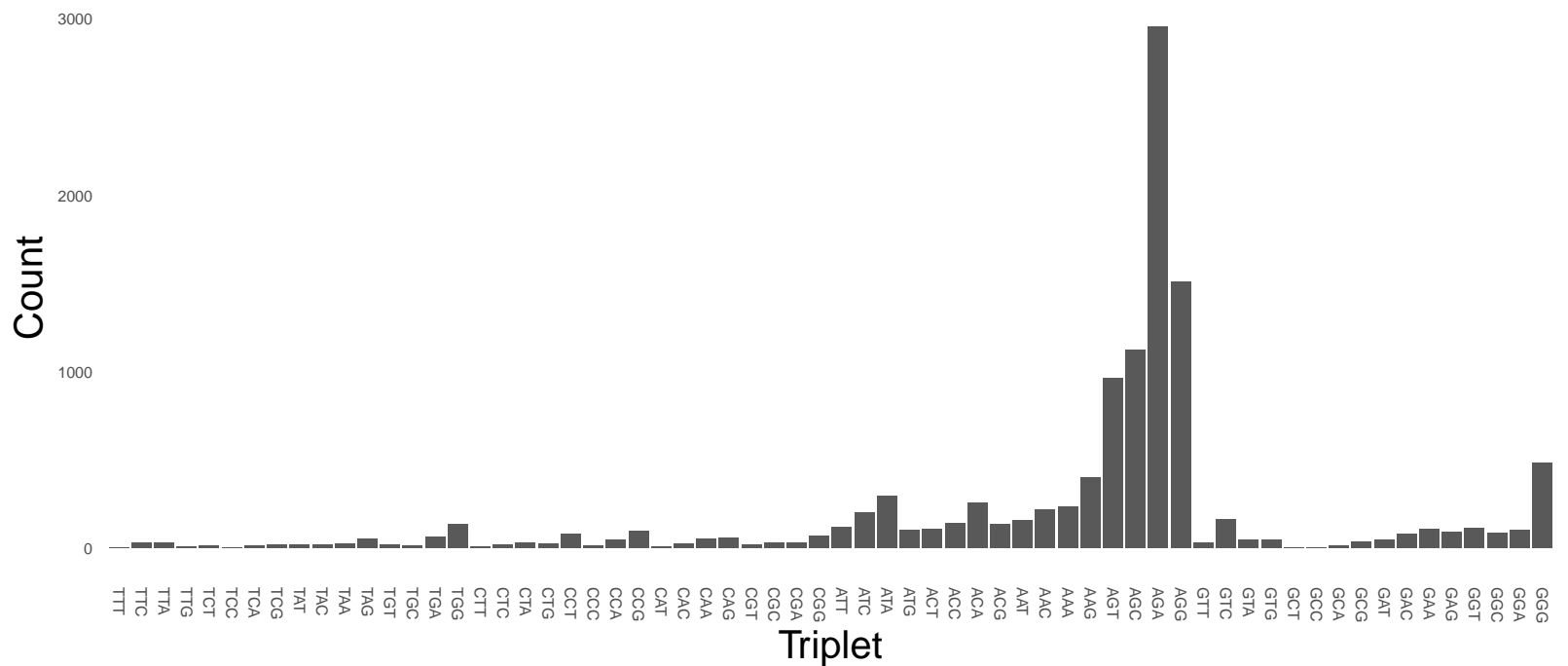
IGHV4-147*01_G82T_G83A_A162G_C163T_G164A_A196T_G197A_C215A_G291A- Final 3 nucleotides as a triplet



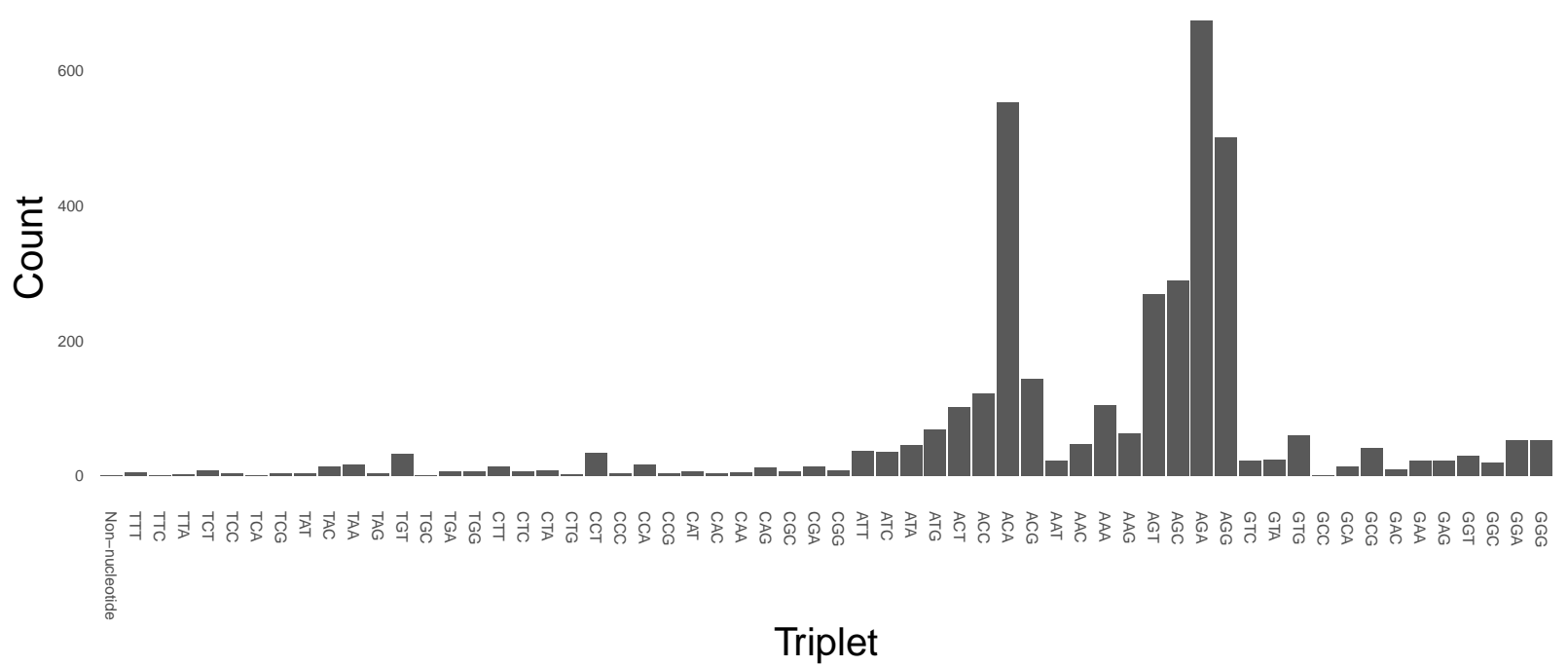
IGHV3-103*01_T19A_G24A_C27A_C38T_A39C_A40C_C120G_G157A- Final 3 nucleotides as a



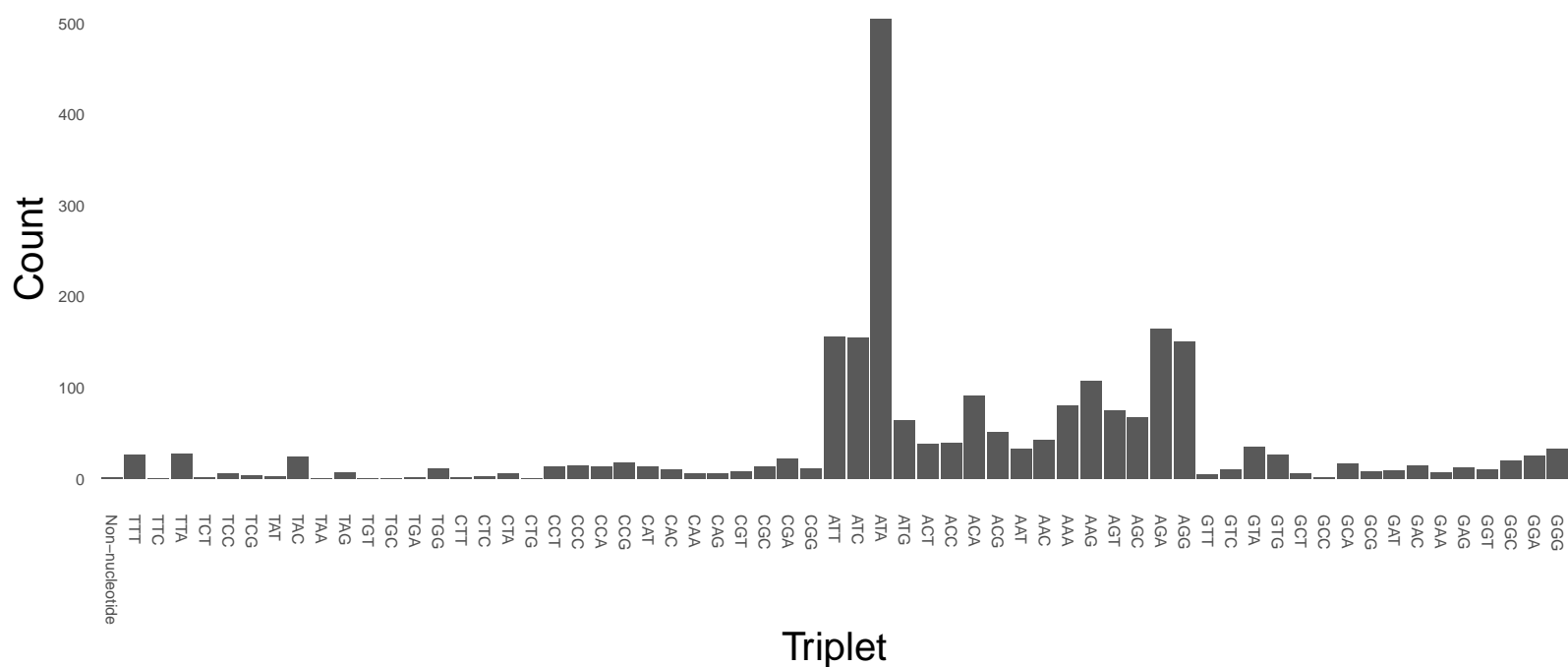
IGHV3-103*01_G24A_C27A_C38T_A39C_A40C_C113G_T114C_C118A_A119G_G163T_C164



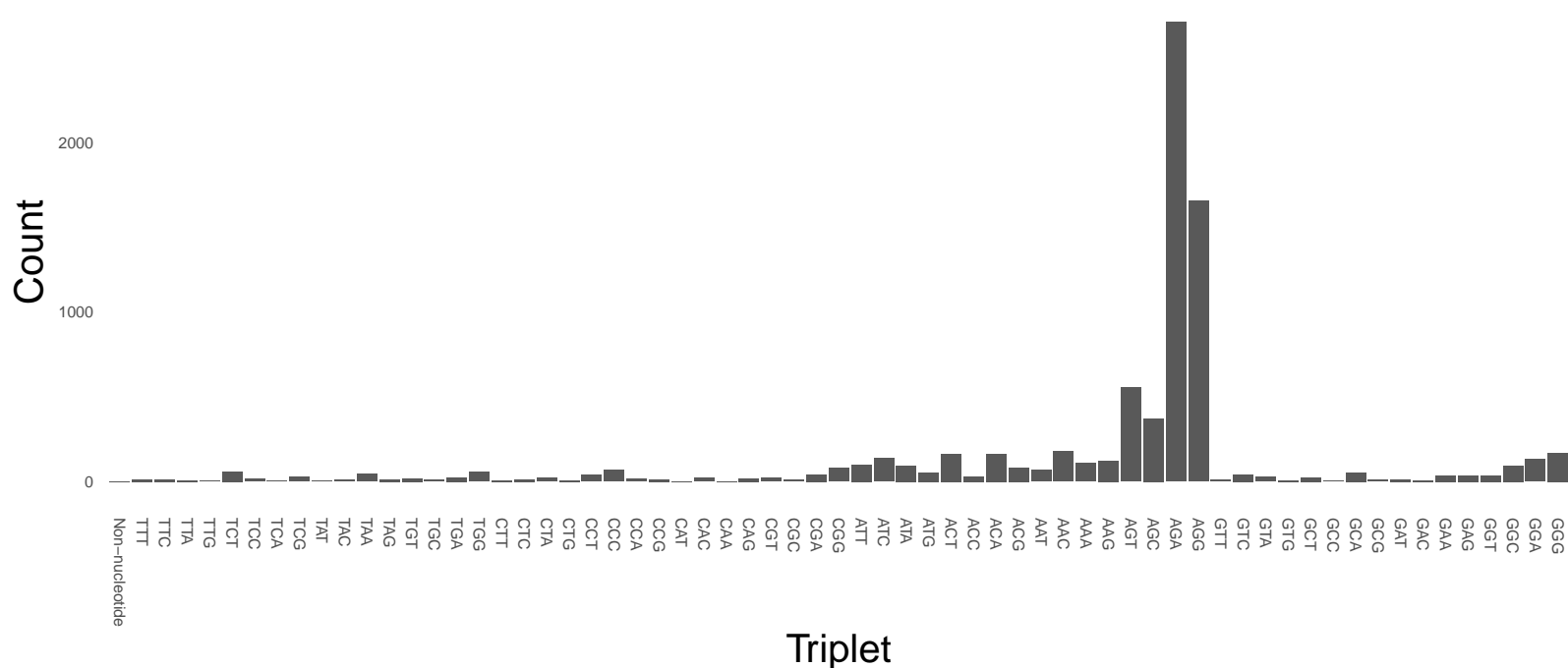
IGHV4-65*01_G297C- Final 3 nucleotides as a triplet



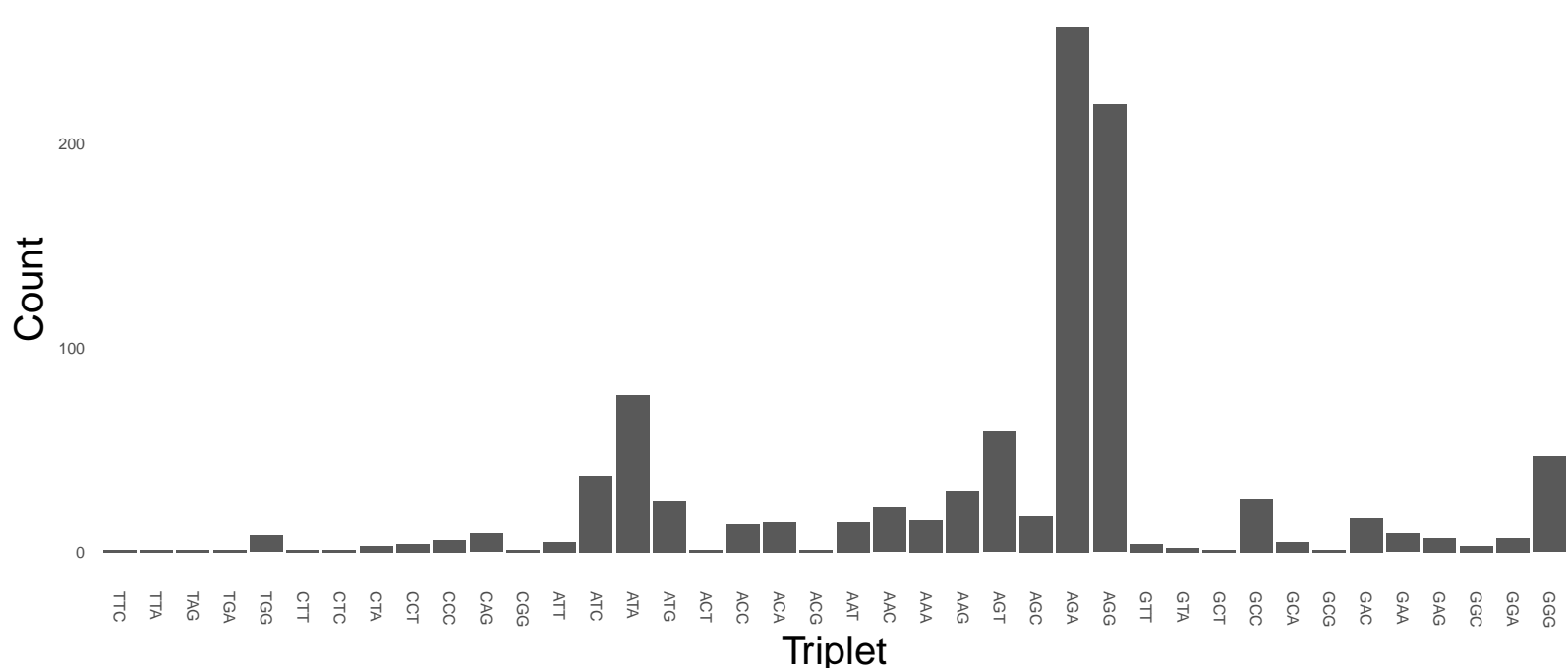
IGHV4–80*01_C83G_A88T_T105C_T189G_T196A– Final 3 nucleotides as a triplet



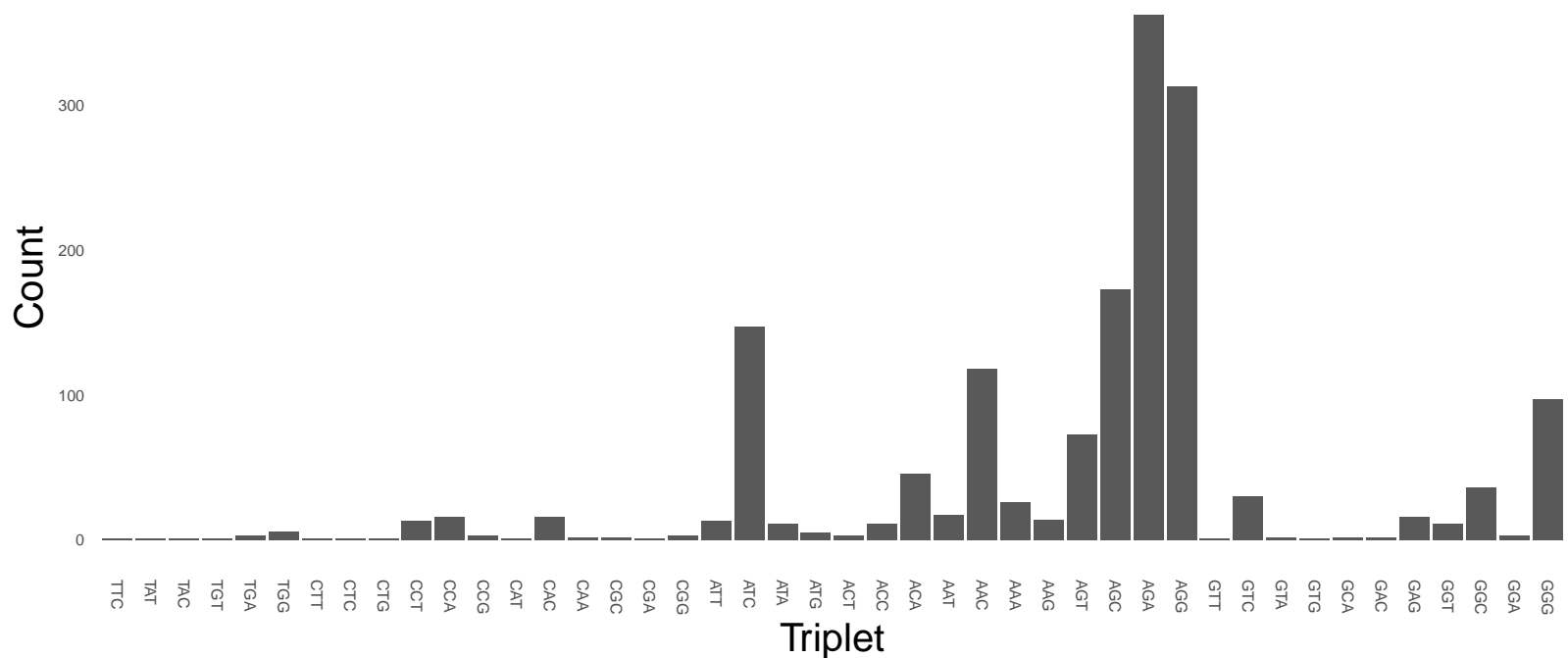
IGHV4–173*01_C47T– Final 3 nucleotides as a triplet



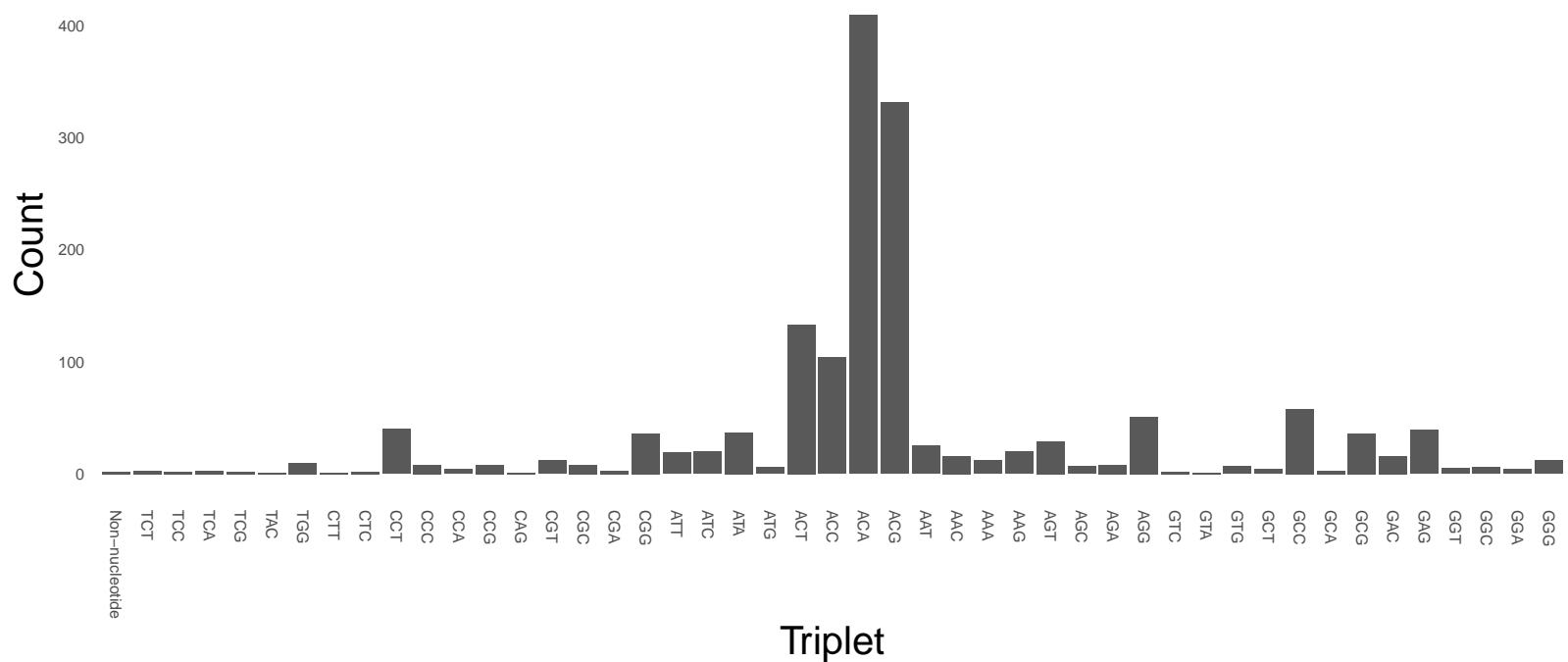
IGHV5–20*02_A295T_C312T– Final 3 nucleotides as a triplet



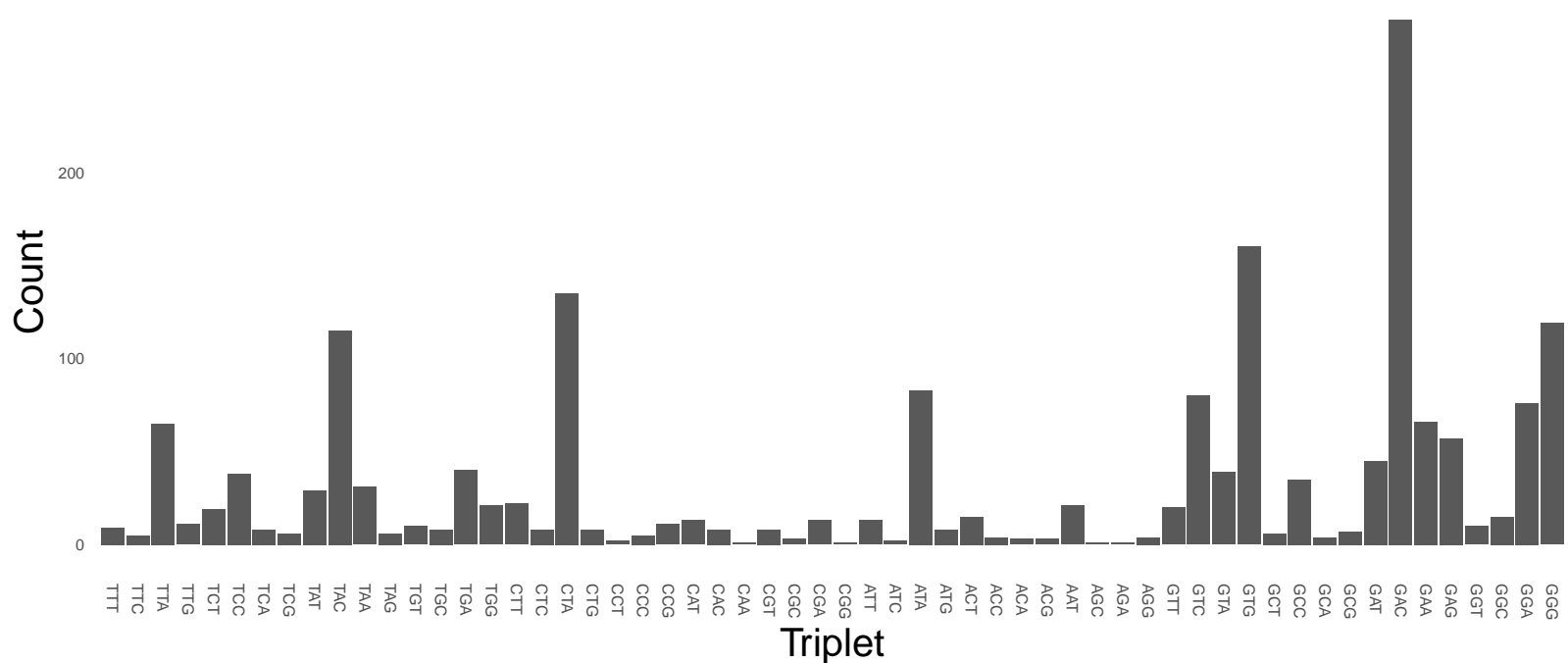
IGHV5-20*02_A141G_G259A_C312T- Final 3 nucleotides as a triplet



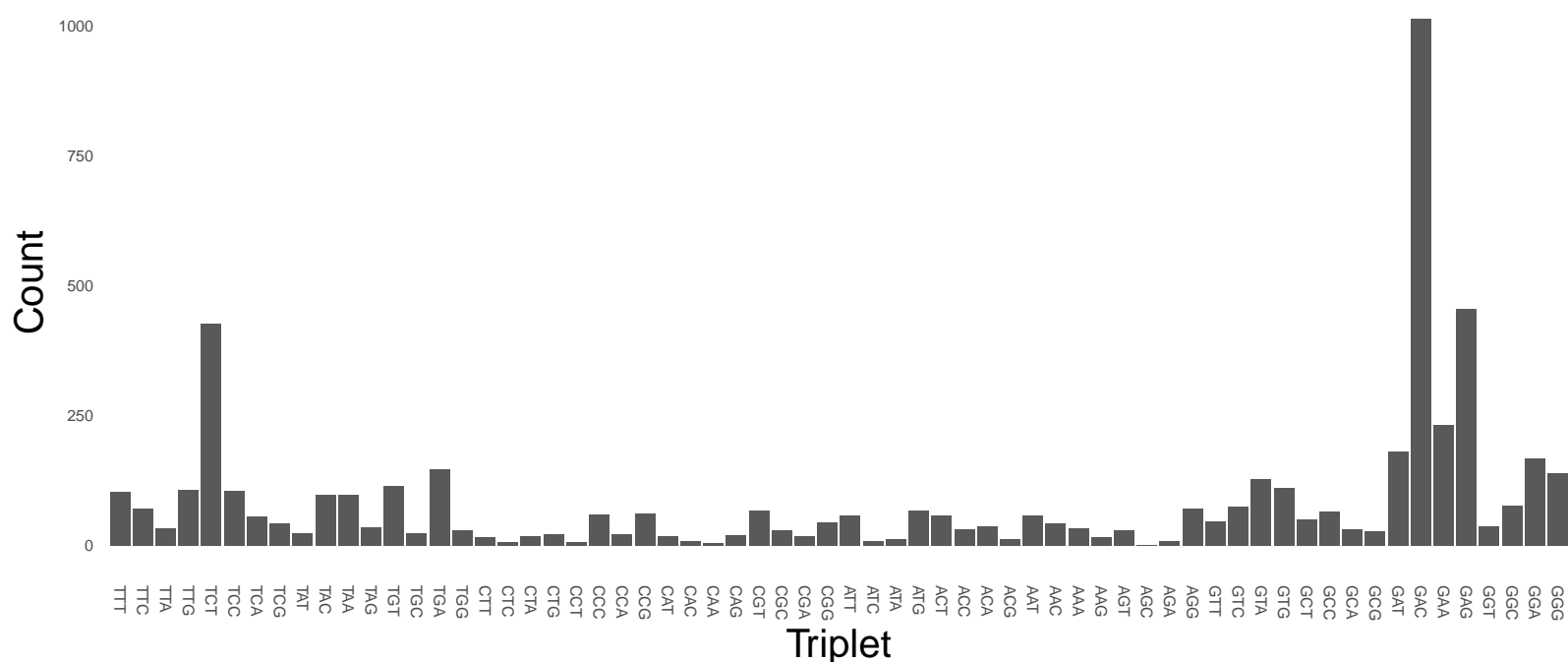
IGHV7-114*01_T81A_G112T_G113C_A118C_A261G- Final 3 nucleotides as a triplet



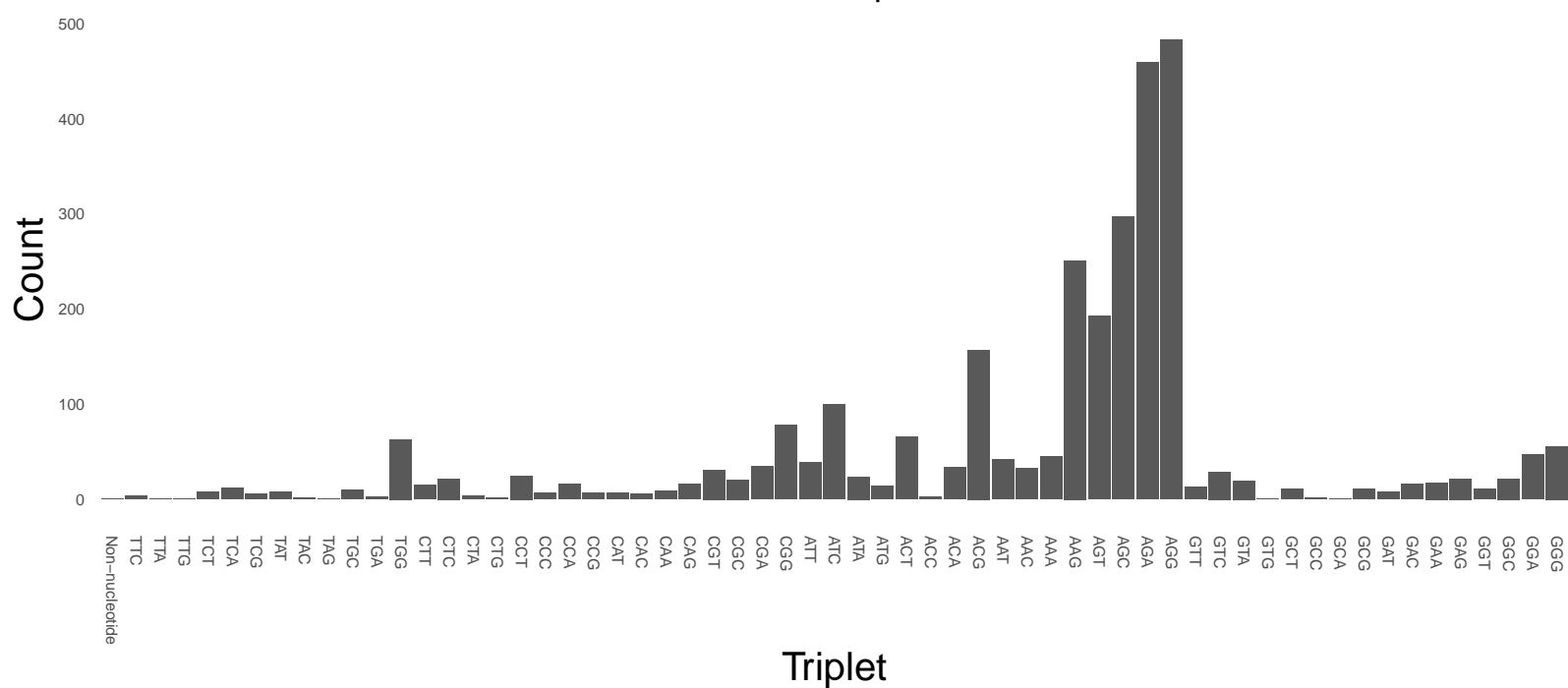
IGHV2-161*01_C34T_A88C_A103T_G141A_A153G_T159G_A163C_T169G_G187A_G240A_G2



IGHV2-174*02_A267G_A289G- Final 3 nucleotides as a triplet

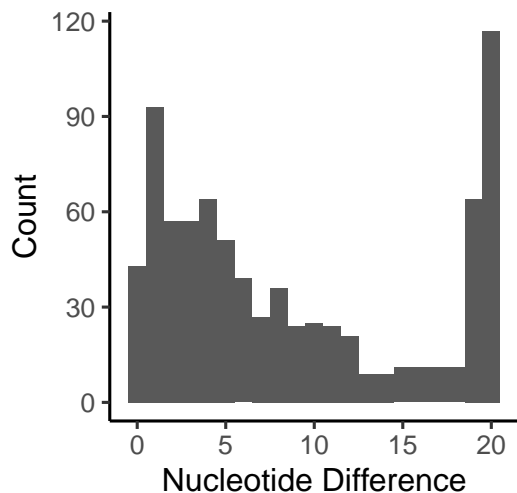


IGHV4-169*02_C259T- Final 3 nucleotides as a triplet



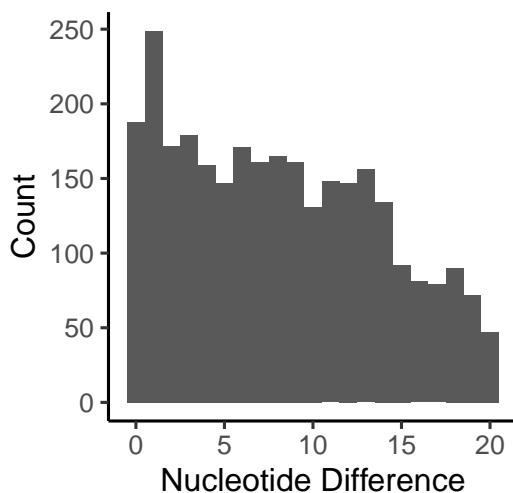
IGHV2-161*01_C34T_A8

1838 sequences assigned
43 (2.3%) exact matches, in which:
38 unique CDR3
5 unique J



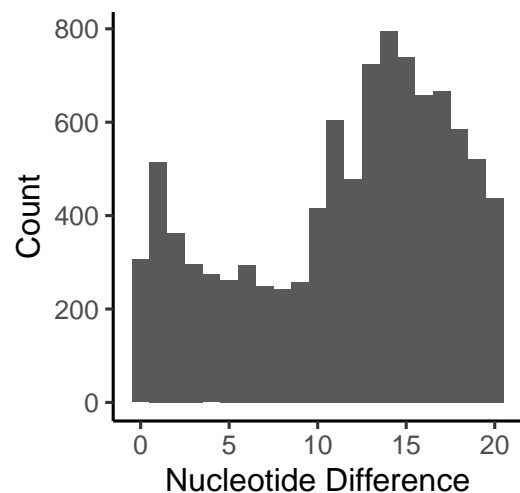
IGHV3-54*02_G170C

3452 sequences assigned
188 (5.4%) exact matches, in which:
173 unique CDR3
4 unique J



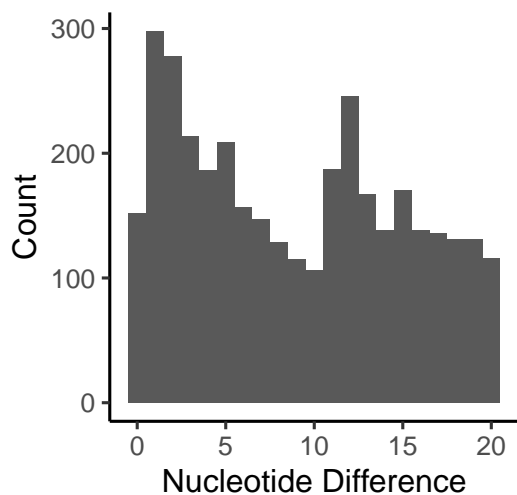
IGHV3-103*01_T19A_G2

12793 sequences assigned
306 (2.4%) exact matches, in which:
281 unique CDR3
4 unique J



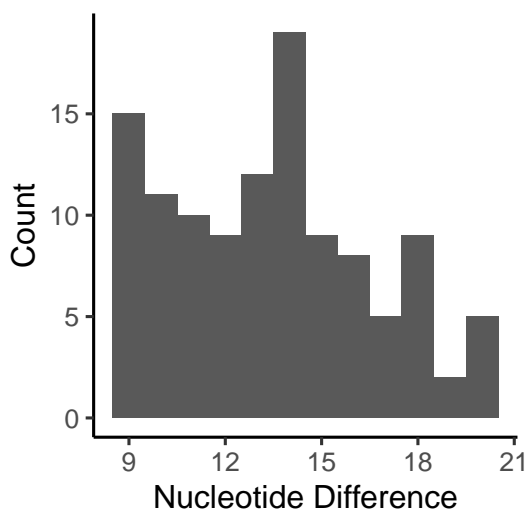
IGHV2-174*02_A267G_A

5310 sequences assigned
152 (2.9%) exact matches, in which:
144 unique CDR3
4 unique J



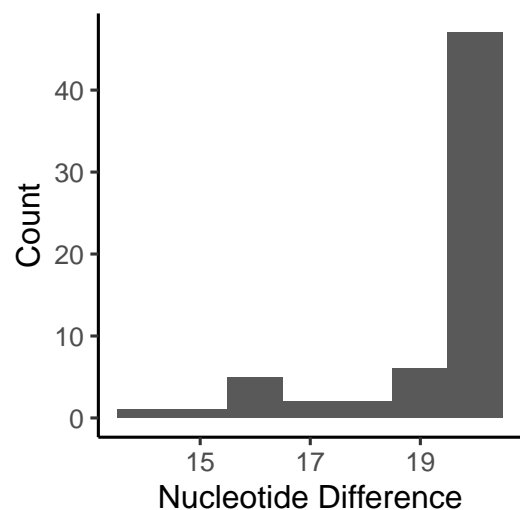
IGHV3-78*01

662 sequences assigned
No exact matches.



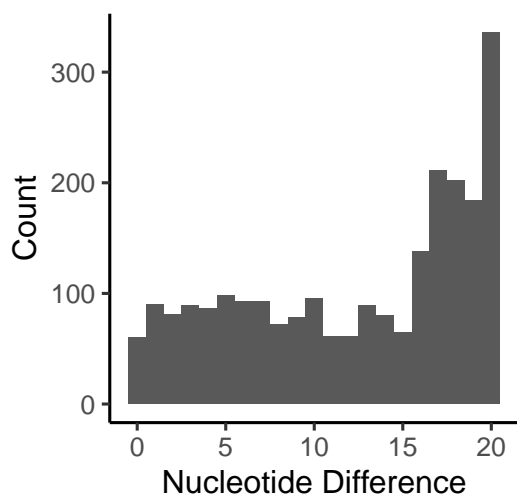
IGHV3-108*01

3910 sequences assigned
No exact matches.



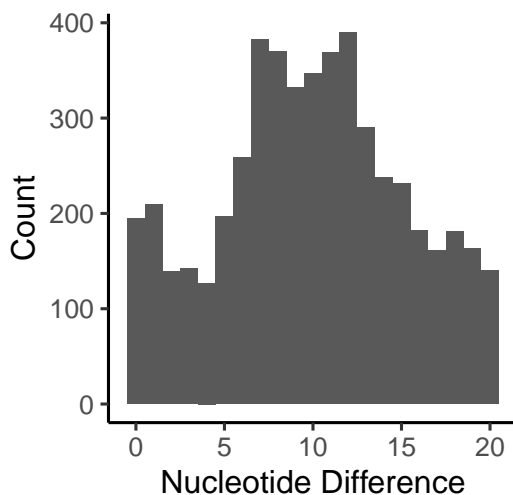
IGHV3-28*02_C118T_C1

7163 sequences assigned
60 (0.8%) exact matches, in which:
55 unique CDR3
4 unique J



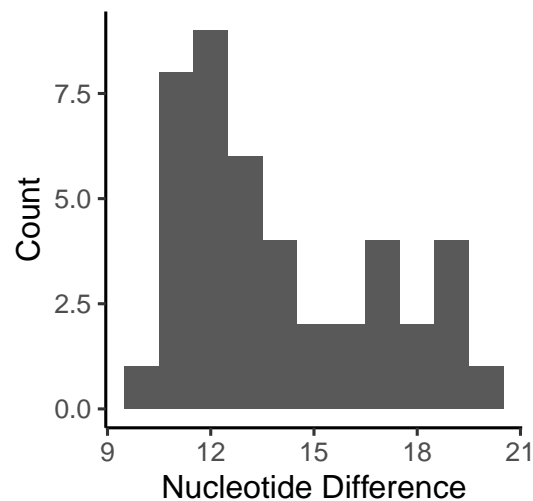
IGHV3-103*01_G24A_C2

11462 sequences assigned
195 (1.7%) exact matches, in which:
178 unique CDR3
5 unique J



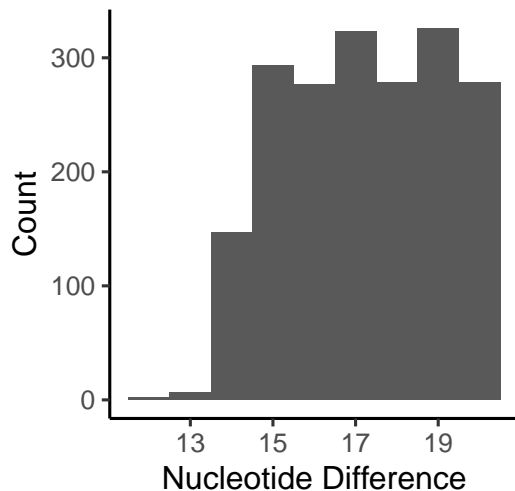
IGHV3-117*01

129 sequences assigned
No exact matches.



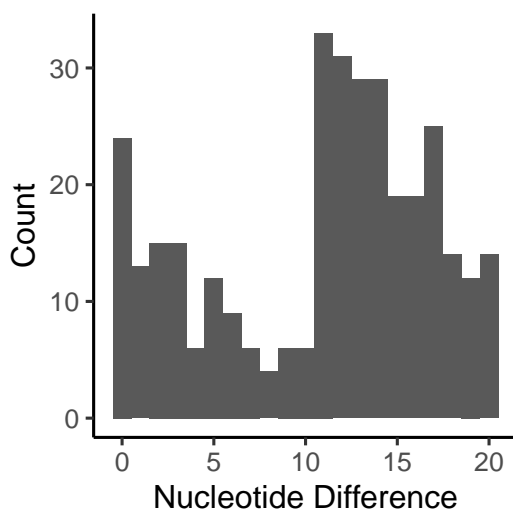
IGHV3-137*01

9124 sequences assigned
No exact matches.



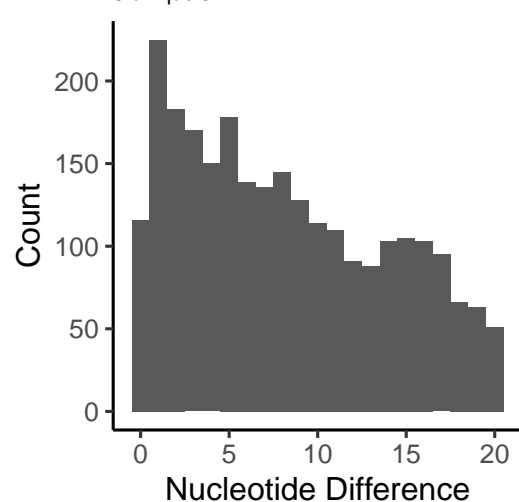
IGHV4-73*01_G147A_T16

454 sequences assigned
24 (5.3%) exact matches, in which:
24 unique CDR3
4 unique J



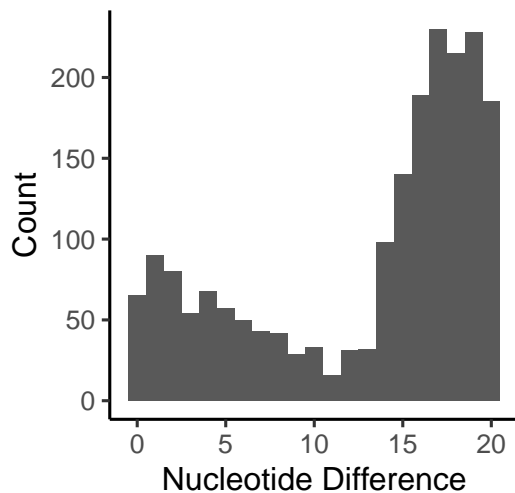
IGHV4-169*02_C259T

2949 sequences assigned
116 (3.9%) exact matches, in which:
109 unique CDR3
5 unique J



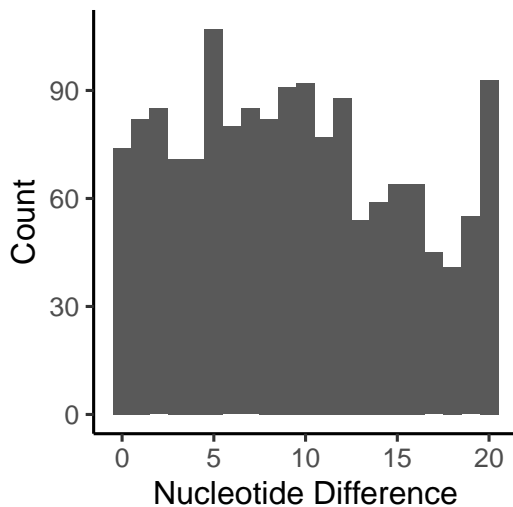
IGHV4-65*01_G297C

3697 sequences assigned
65 (1.8%) exact matches, in which:
65 unique CDR3
5 unique J



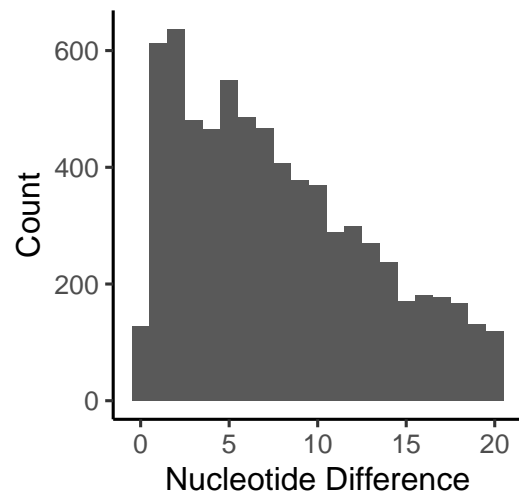
IGHV4-80*01_C83G_A88

2342 sequences assigned
74 (3.2%) exact matches, in which:
69 unique CDR3
5 unique J



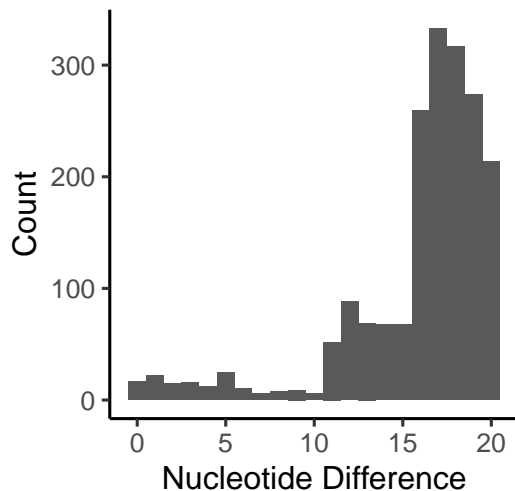
IGHV4-173*01_C47T

7998 sequences assigned
127 (1.6%) exact matches, in which:
124 unique CDR3
5 unique J



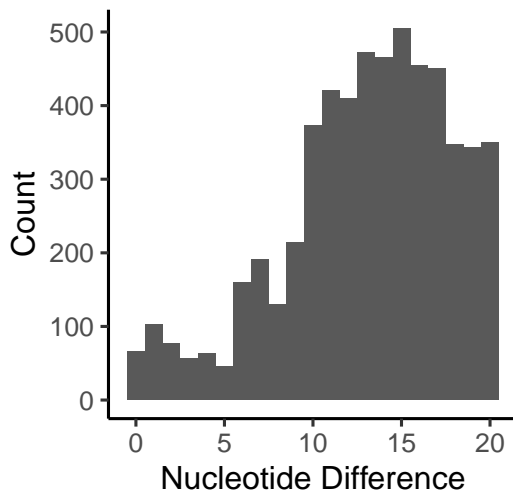
IGHV4-73*01_G147A

3405 sequences assigned
17 (0.5%) exact matches, in which:
17 unique CDR3
5 unique J



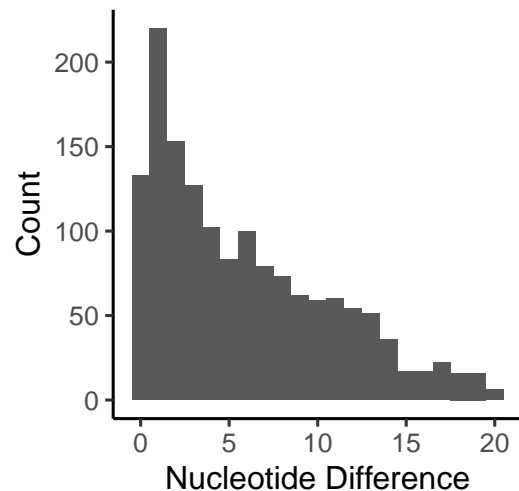
IGHV4-147*01_G82T_G6

8450 sequences assigned
66 (0.8%) exact matches, in which:
64 unique CDR3
4 unique J



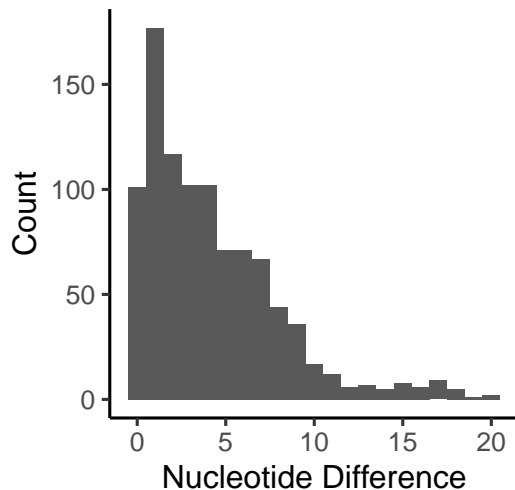
IGHV5-20*02_A141G_G

1606 sequences assigned
133 (8.3%) exact matches, in which:
124 unique CDR3
4 unique J



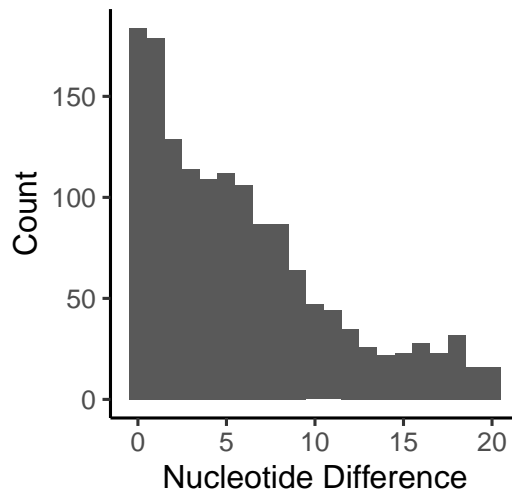
IGHV5–20*02_A295T_C3

977 sequences assigned
101 (10.3%) exact matches, in which:
92 unique CDR3
5 unique J



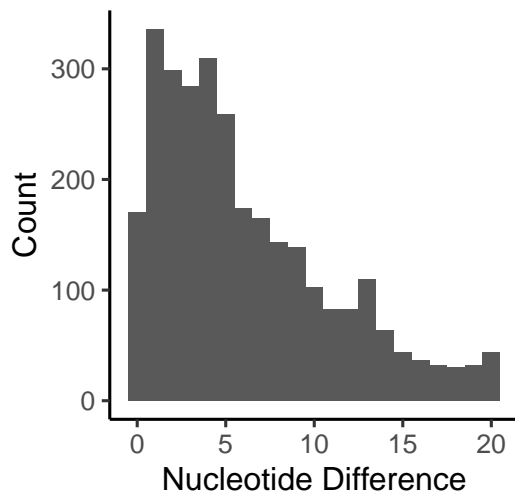
IGHV7–114*01_T81A_G112T_G113C_A118C_A261G

1566 sequences assigned
184 (11.7%) exact matches, in which:
177 unique CDR3
4 unique J



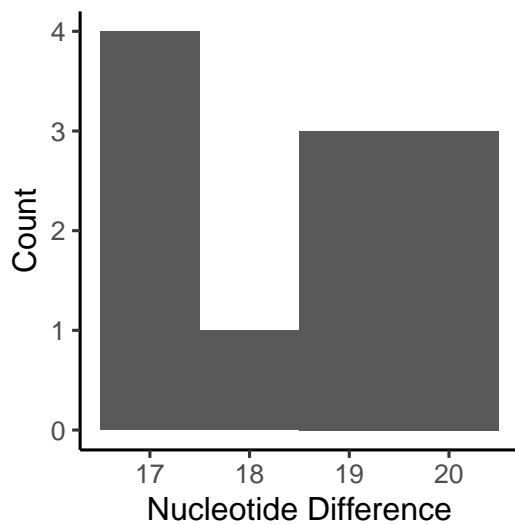
IGHV5–43*01_A109T_G110A_G164T_C165G_A203G_C225G_T231C_A259G

3087 sequences assigned
170 (5.5%) exact matches, in which:
152 unique CDR3
5 unique J

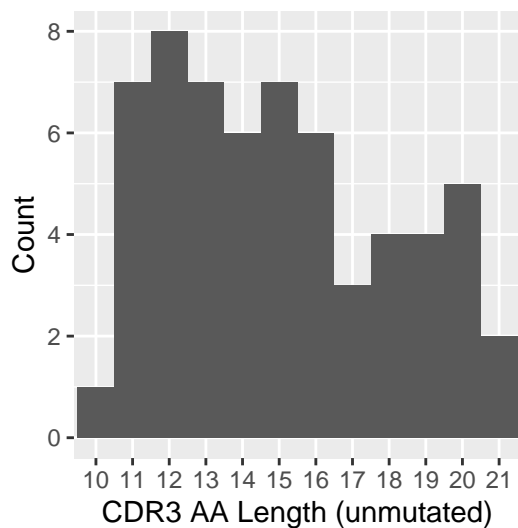


IGHV7–94*01

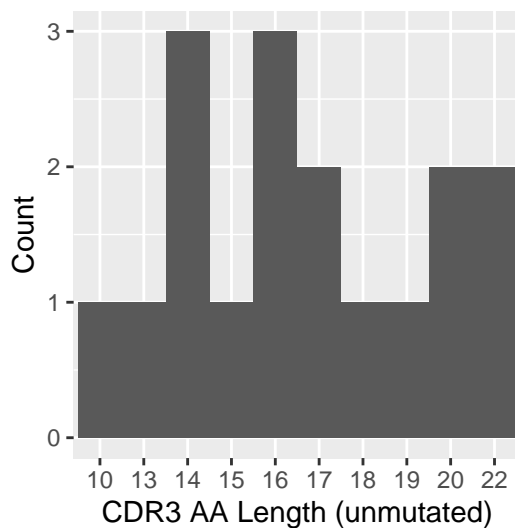
27 sequences assigned
No exact matches.



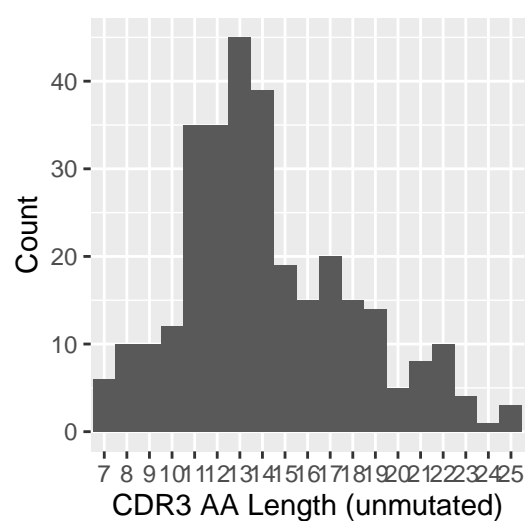
IGHV3-28*02_C118T_C176G



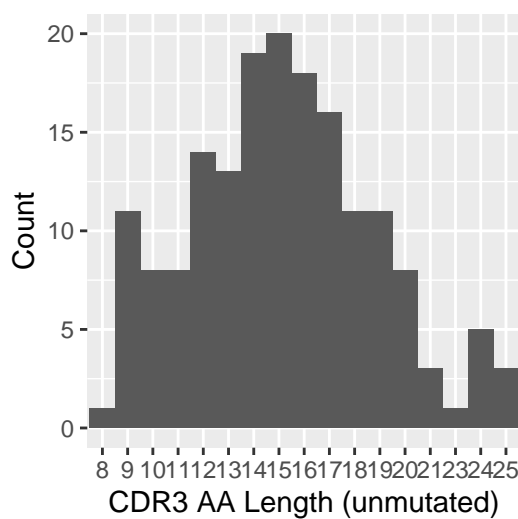
IGHV4-73*01_G147A



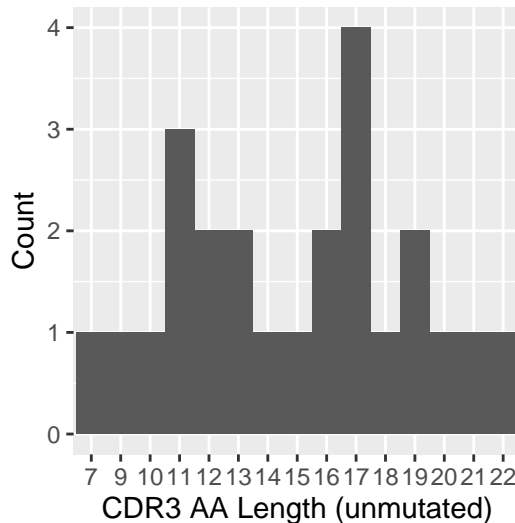
IGHV3-103*01_T19A_G24A



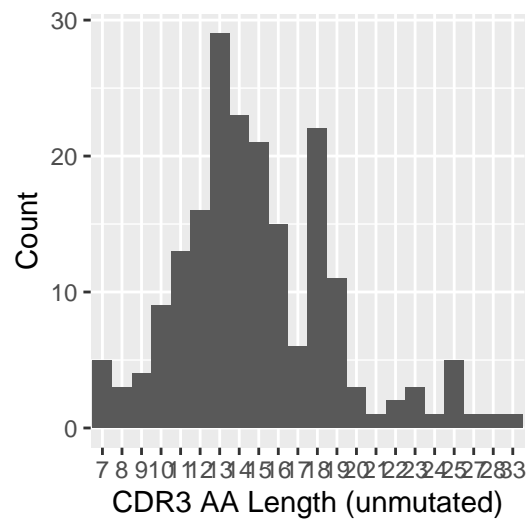
IGHV5-43*01_A109T_G110/



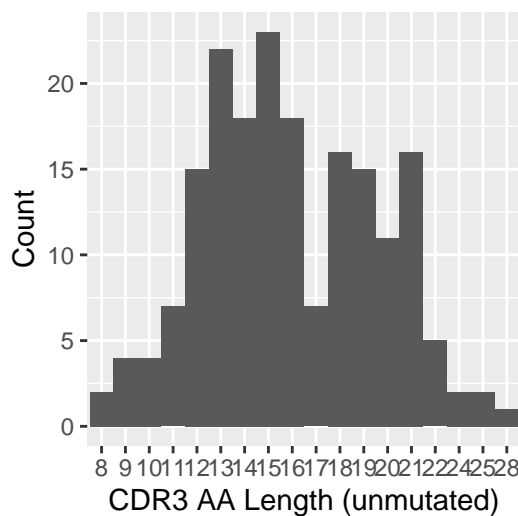
IGHV4-73*01_G147A_T163A



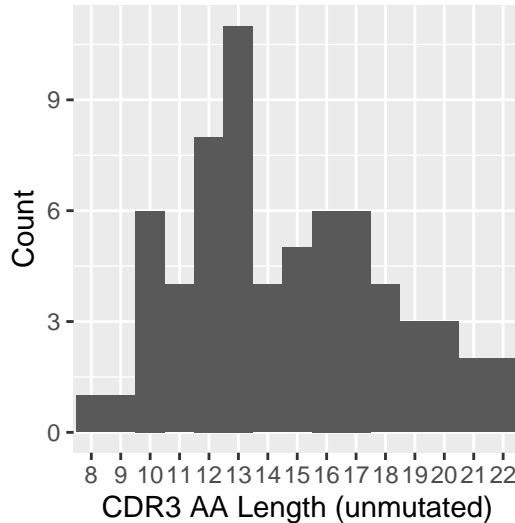
IGHV3-103*01_G24A_C27A



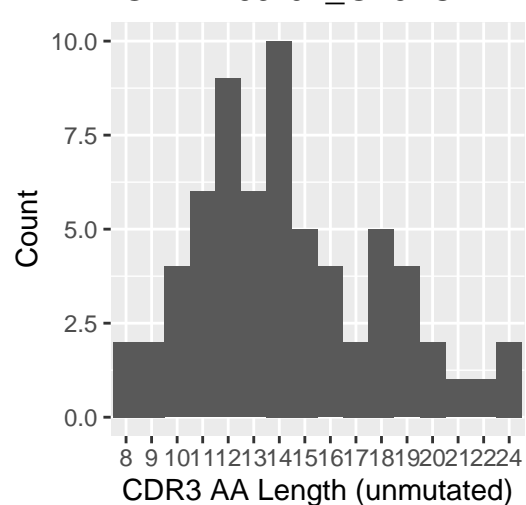
IGHV3-54*02_G170C

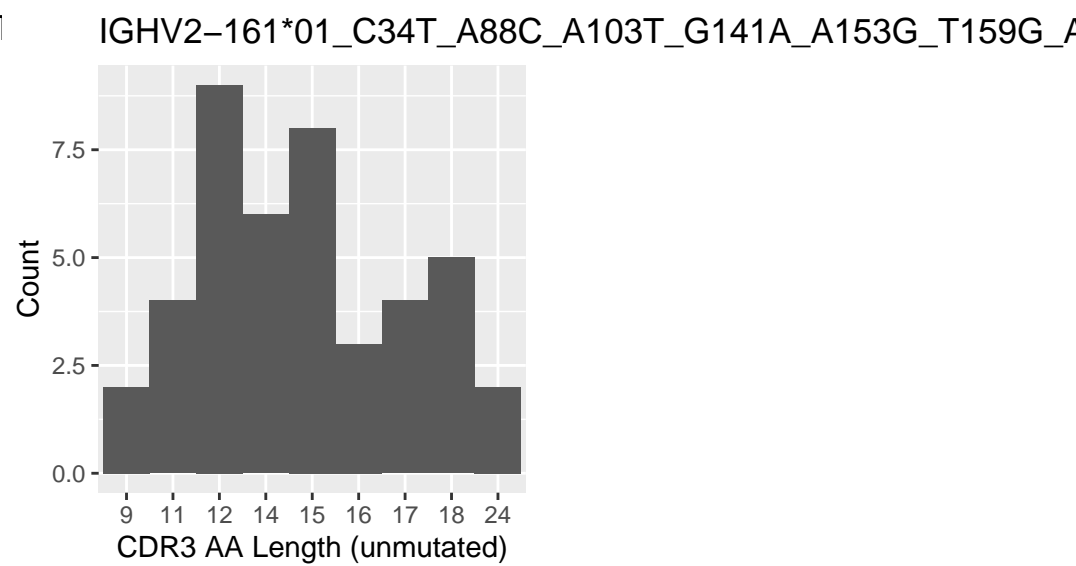
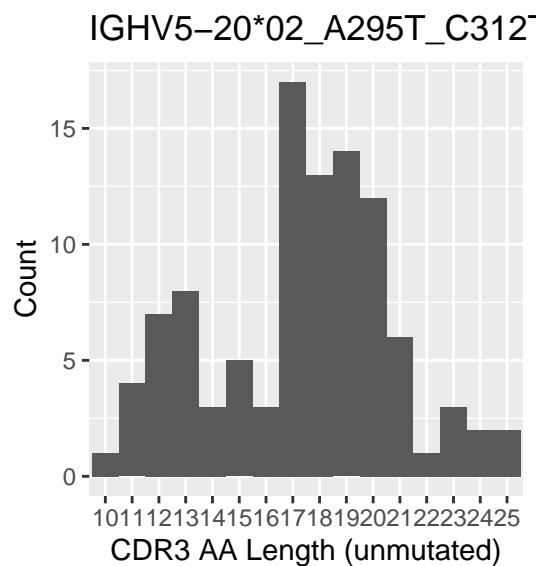
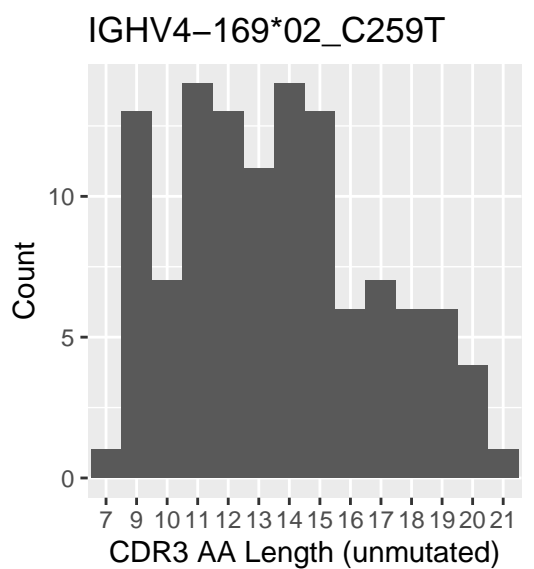
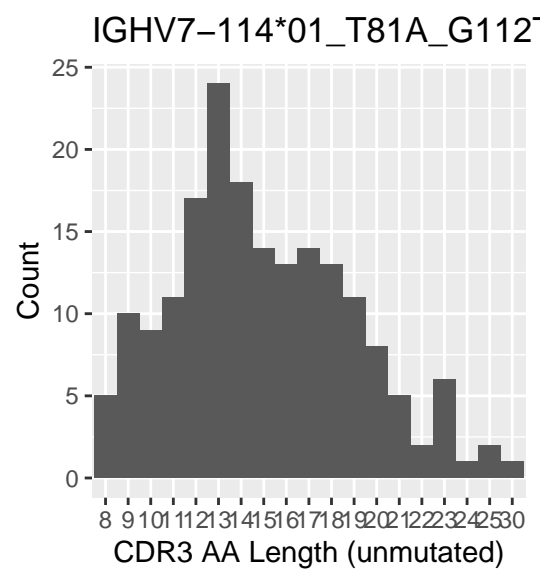
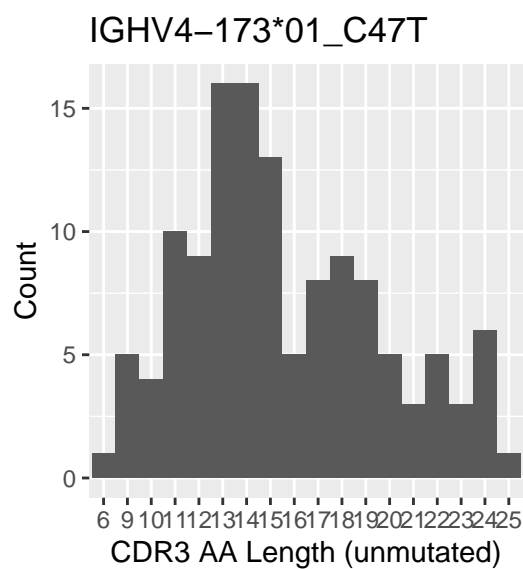
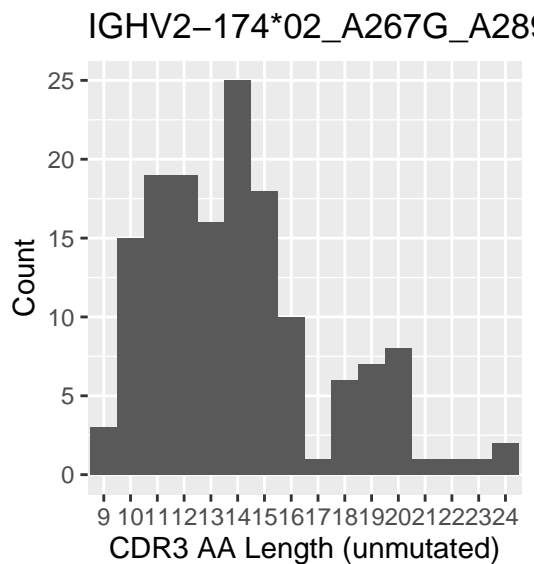
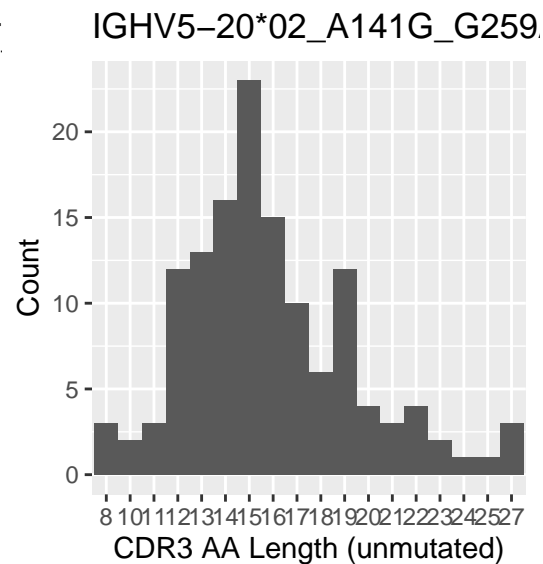
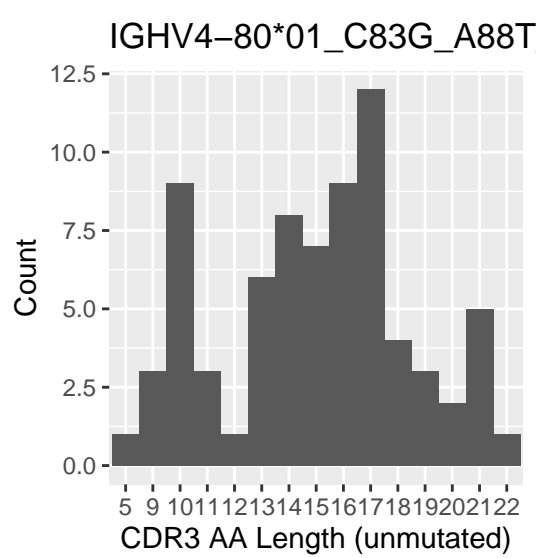


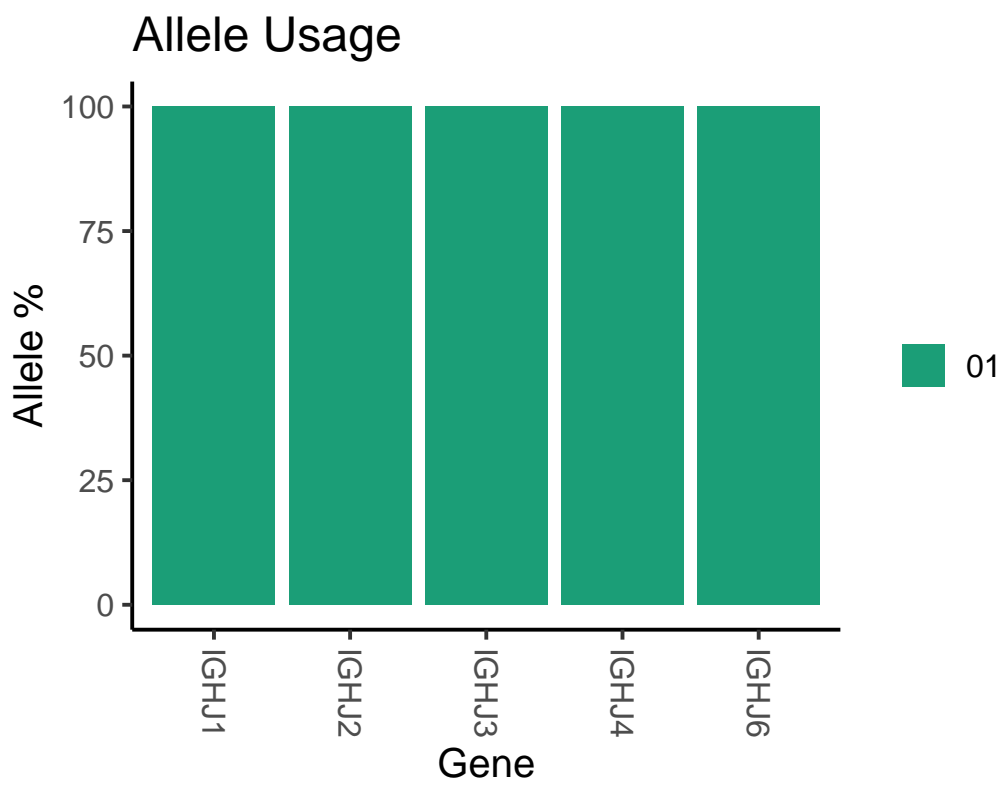
IGHV4-147*01_G82T_G83A_



IGHV4-65*01_G297C







Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.