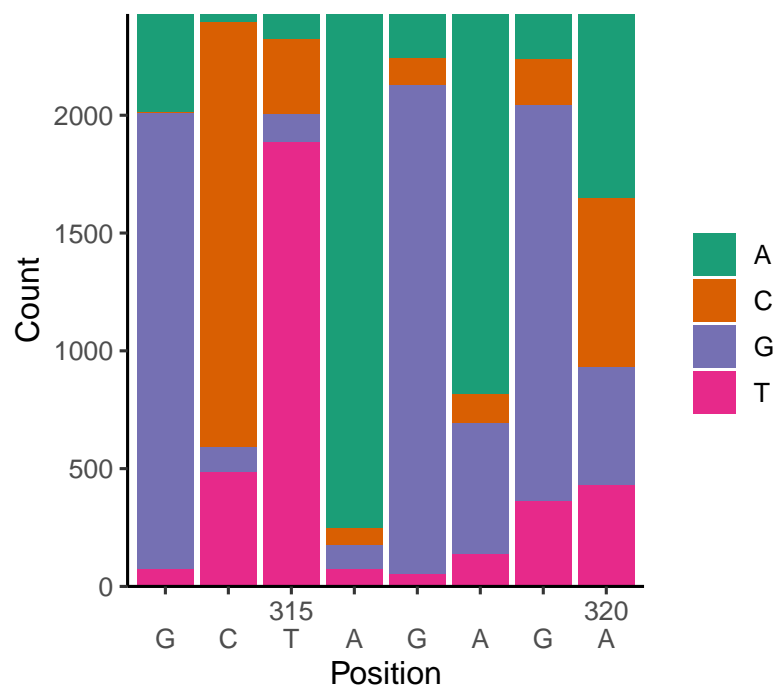
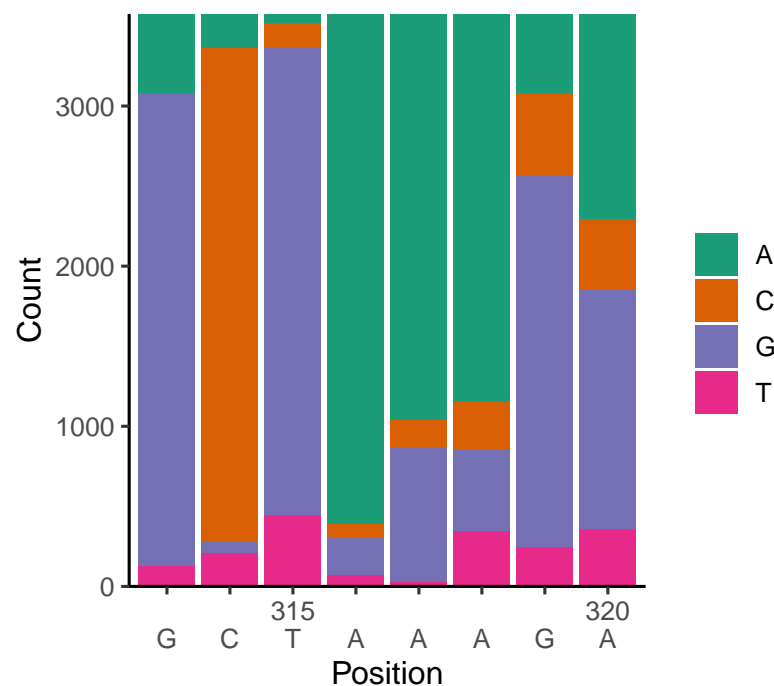


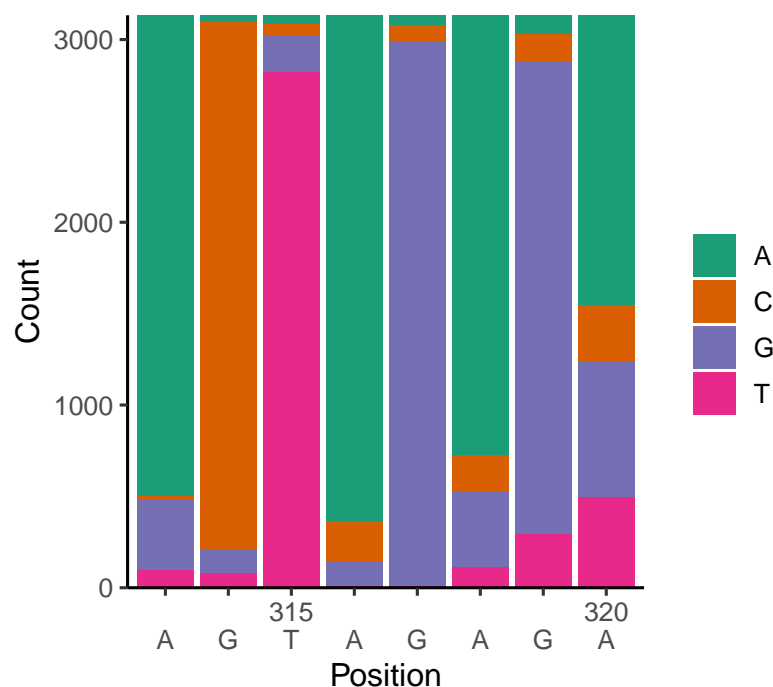
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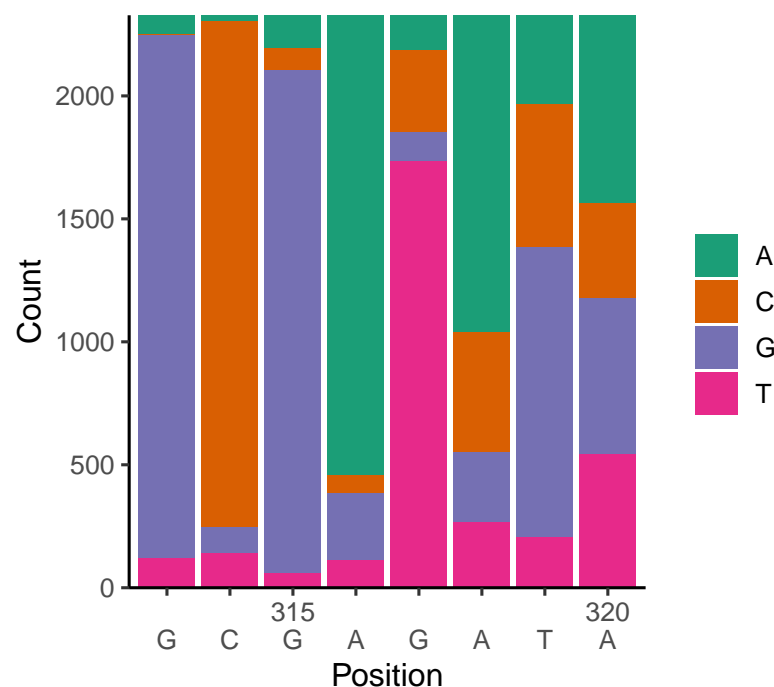
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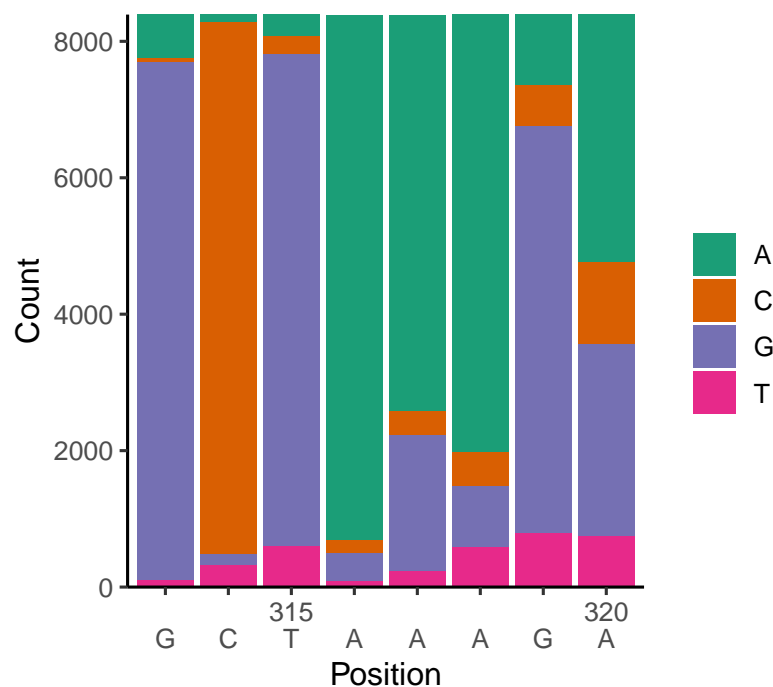
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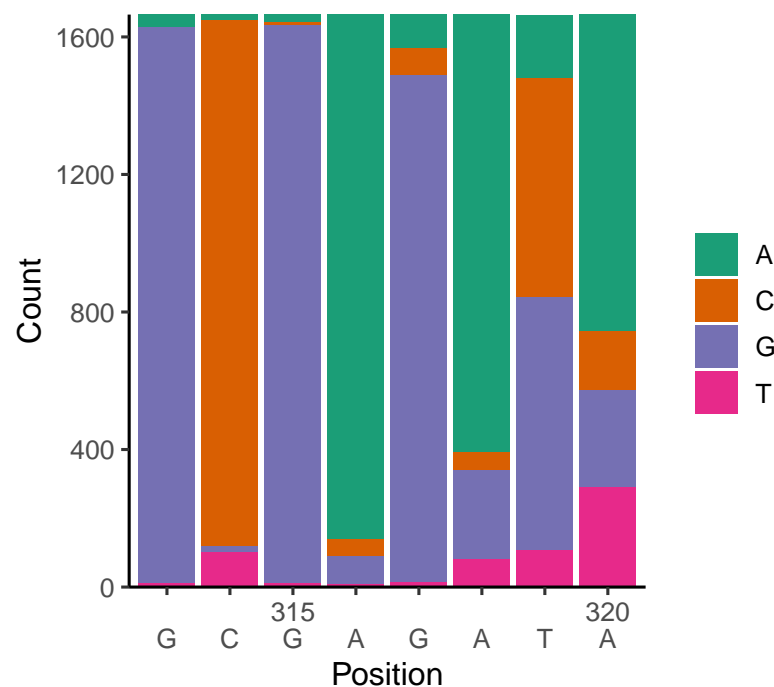
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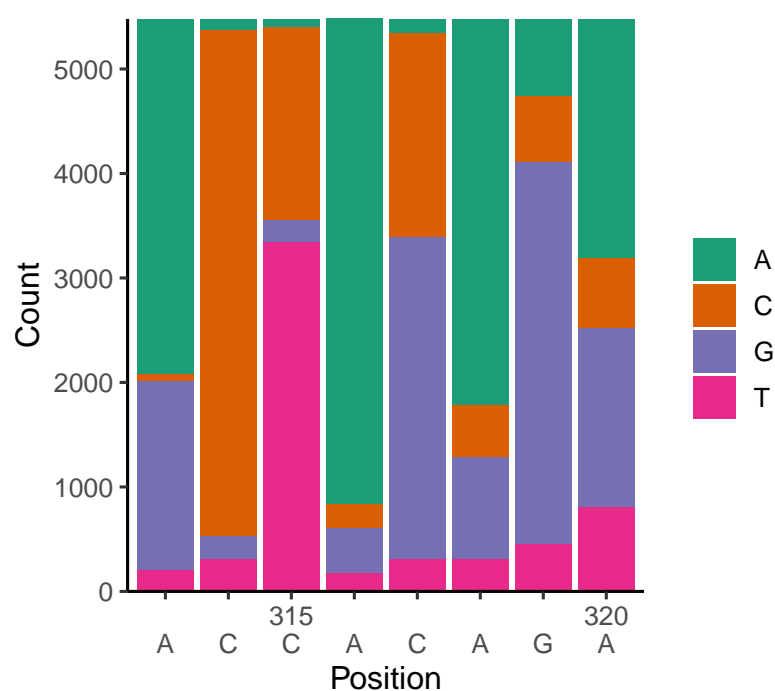
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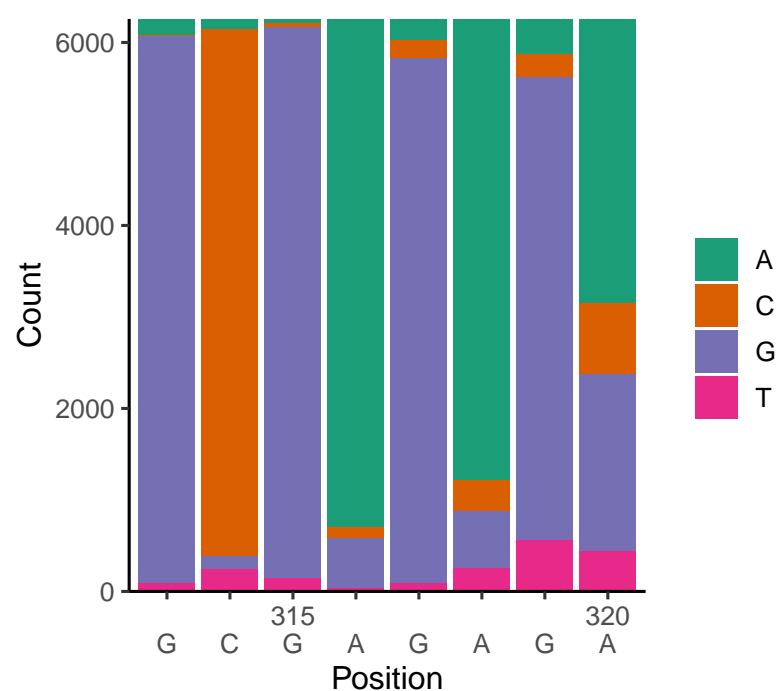
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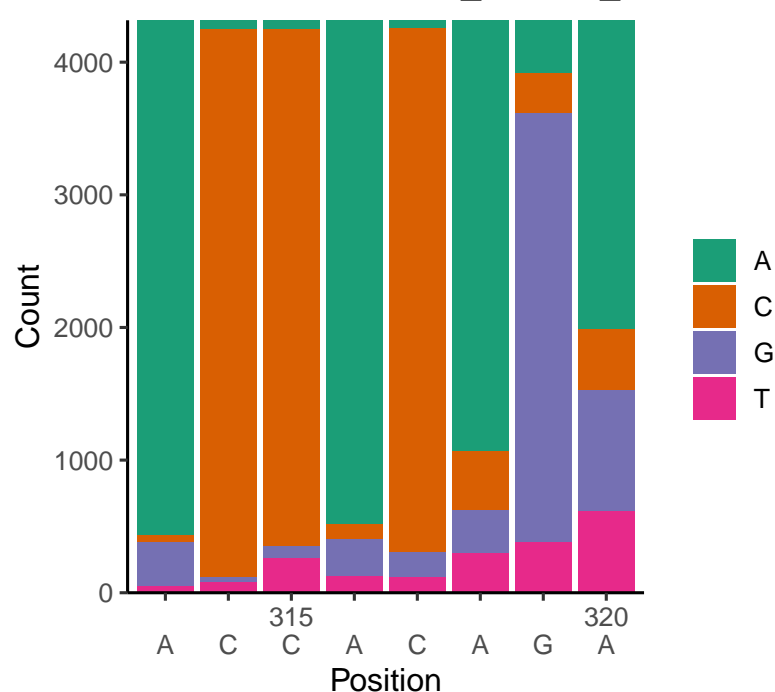
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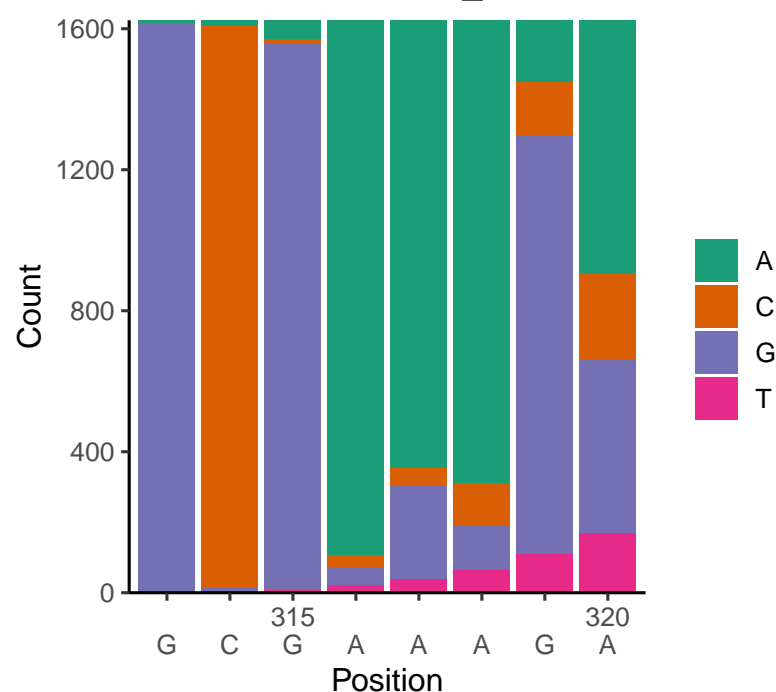
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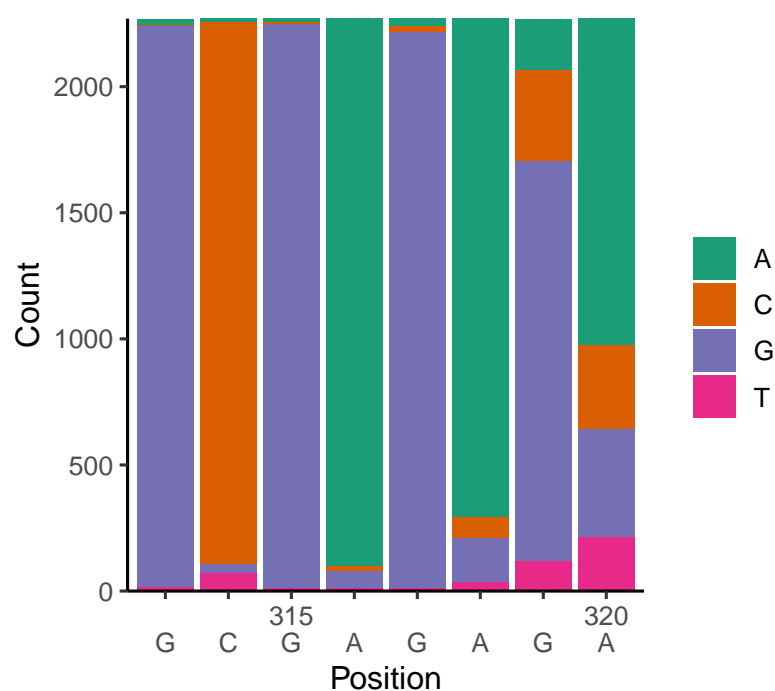
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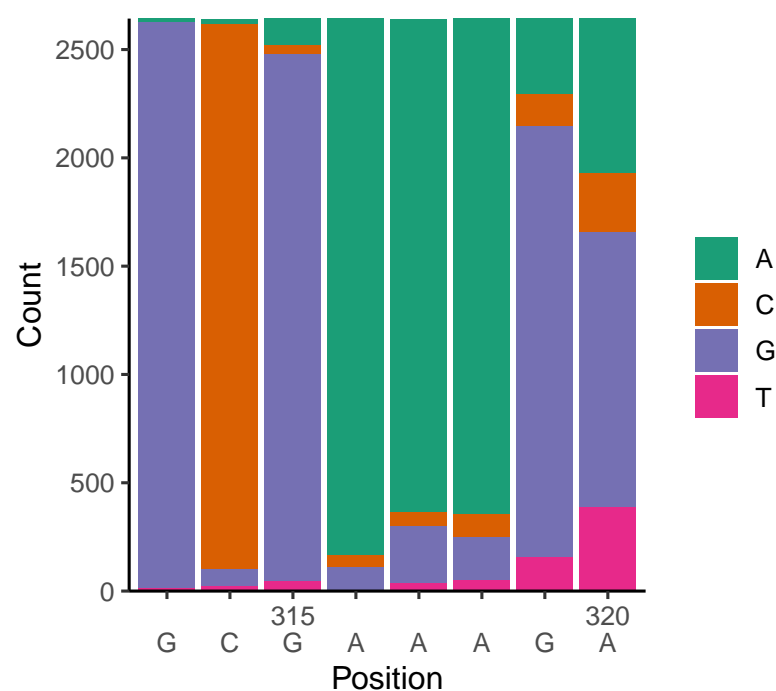
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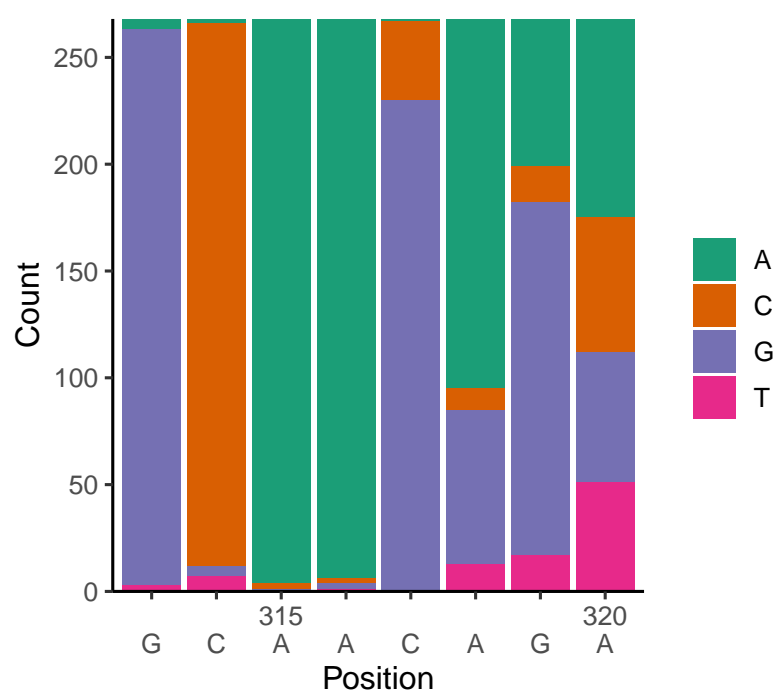
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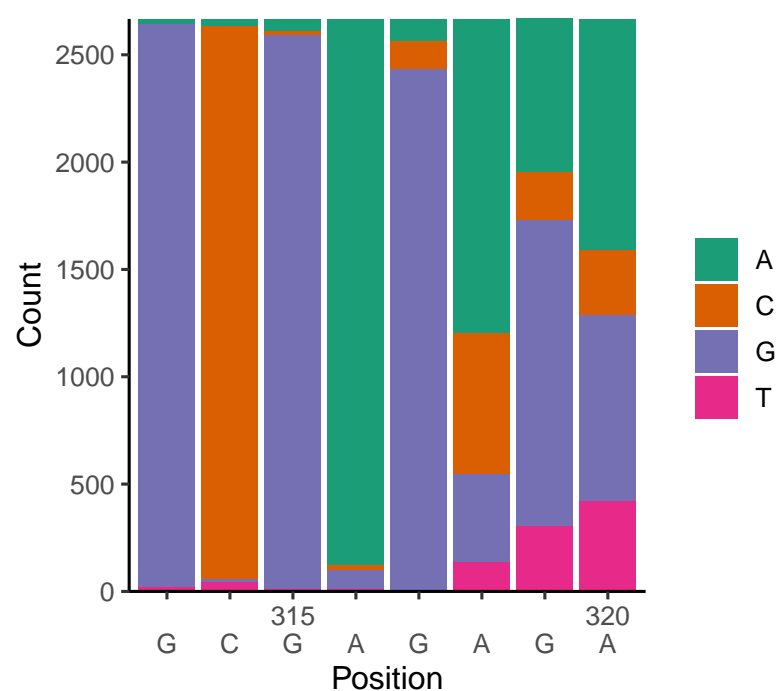
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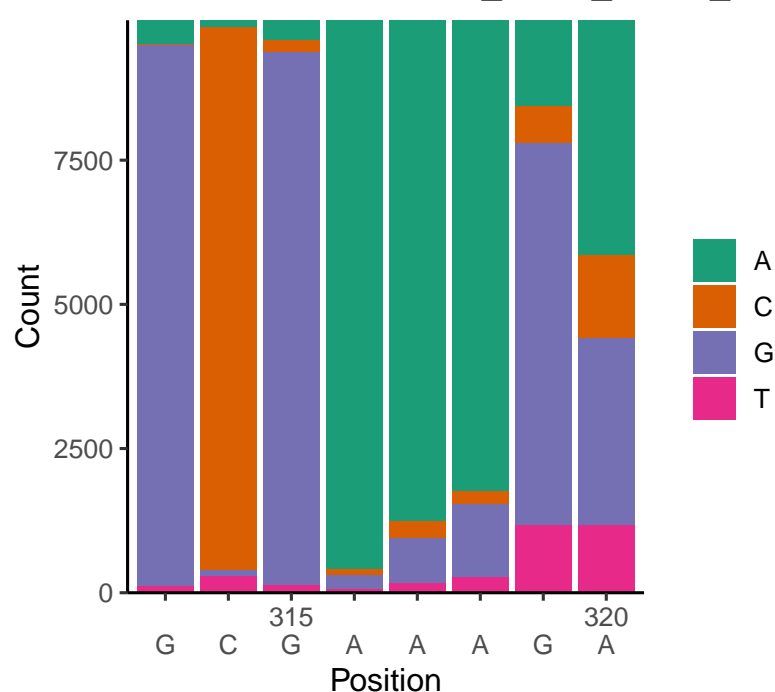
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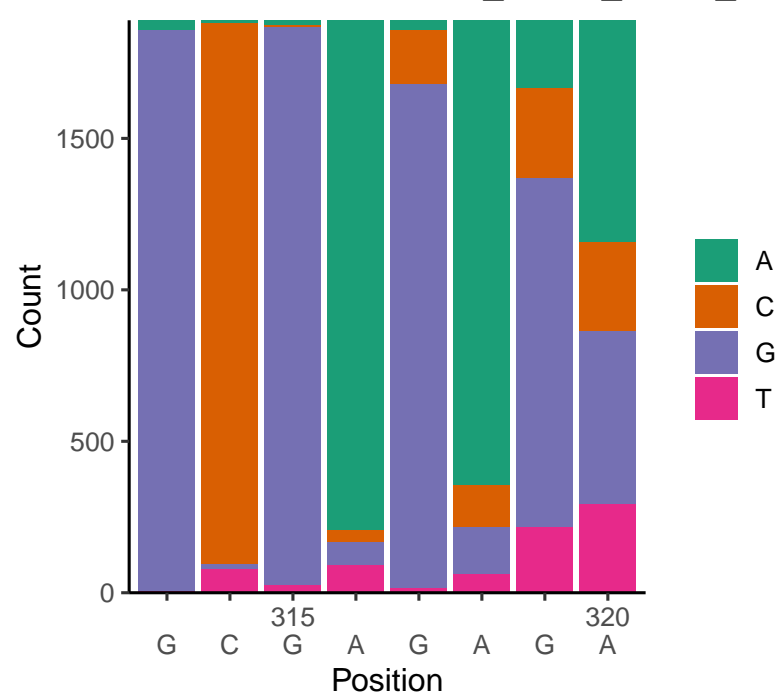
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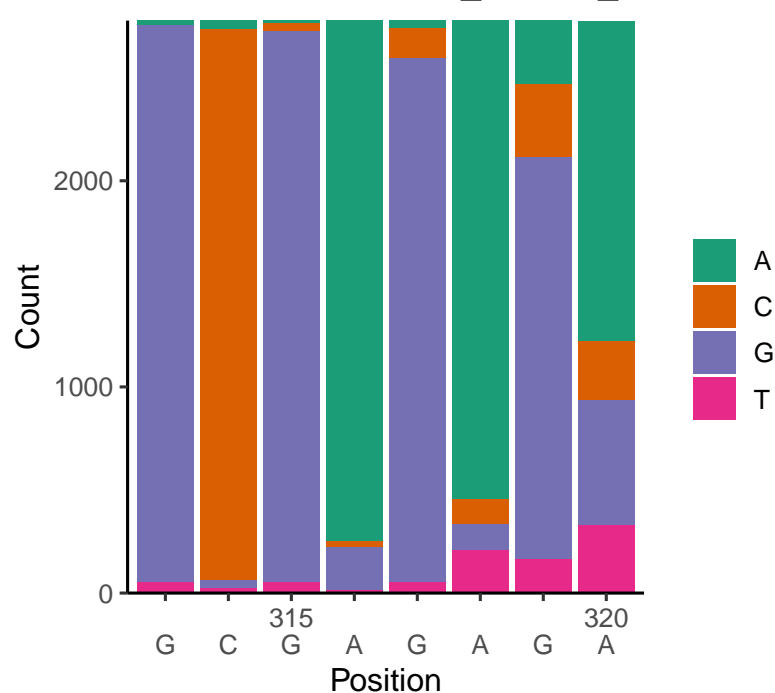
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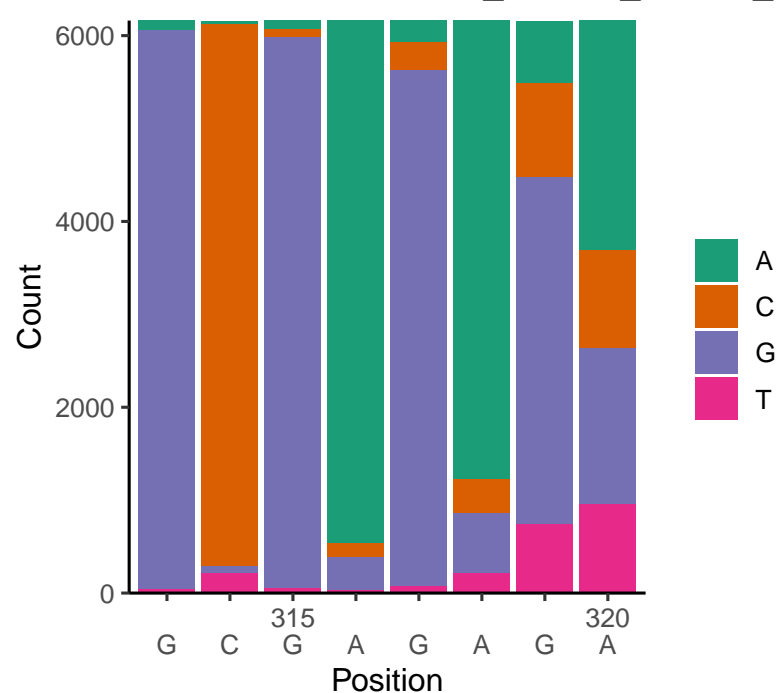
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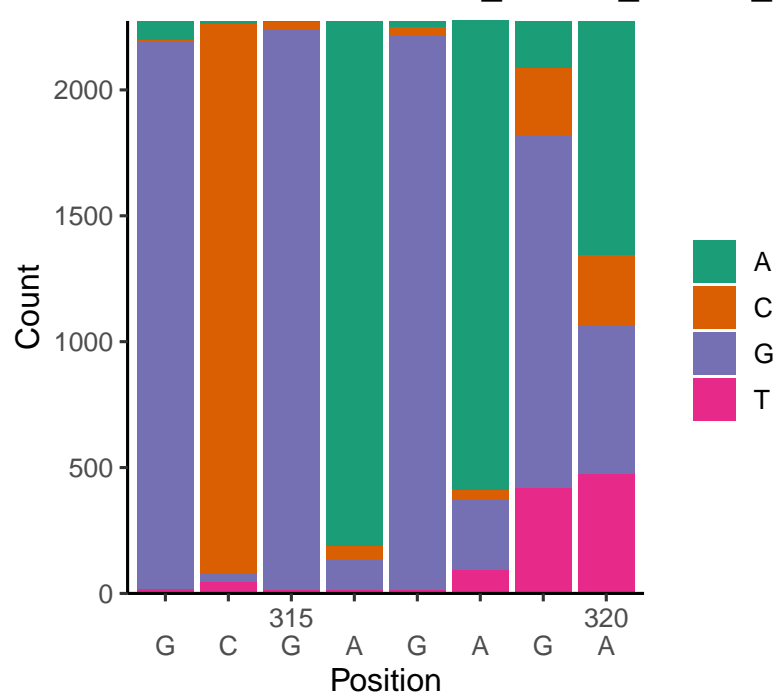
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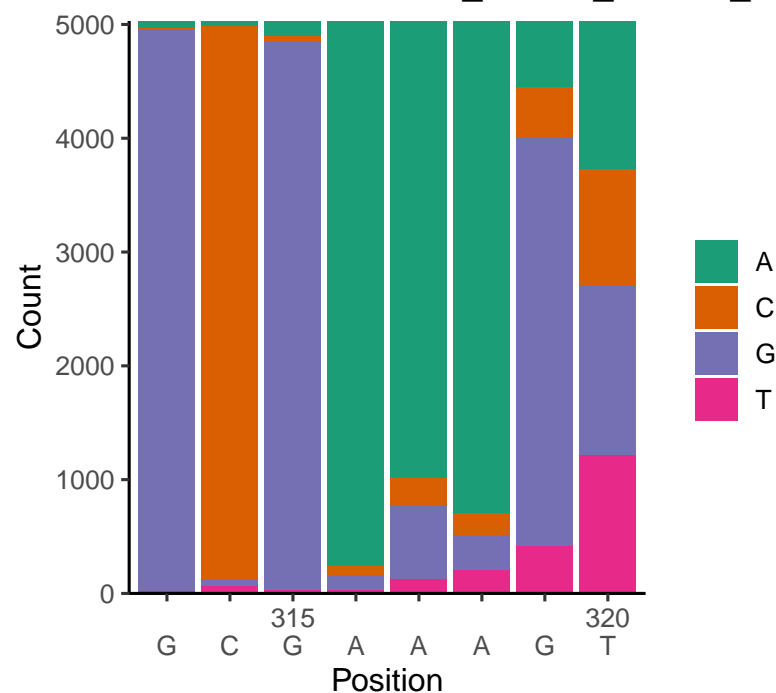
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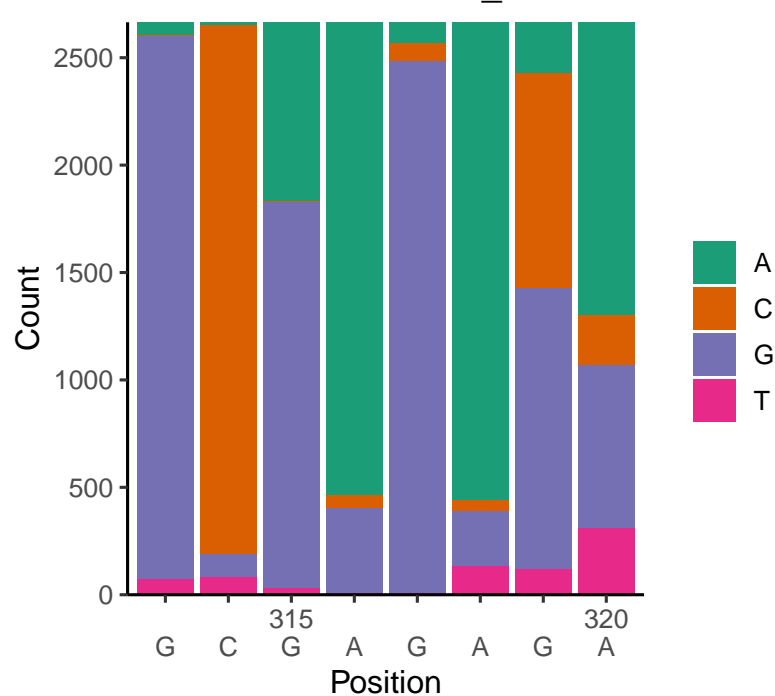
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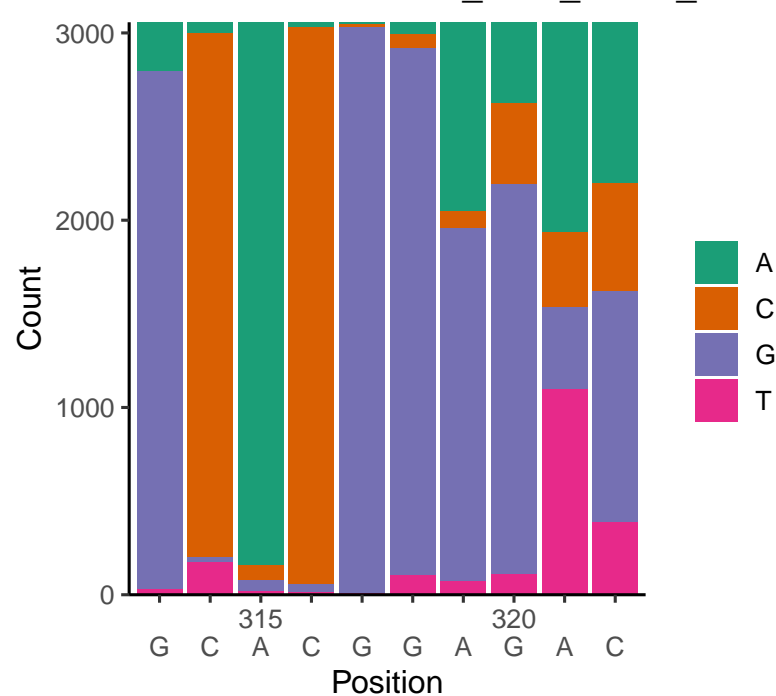
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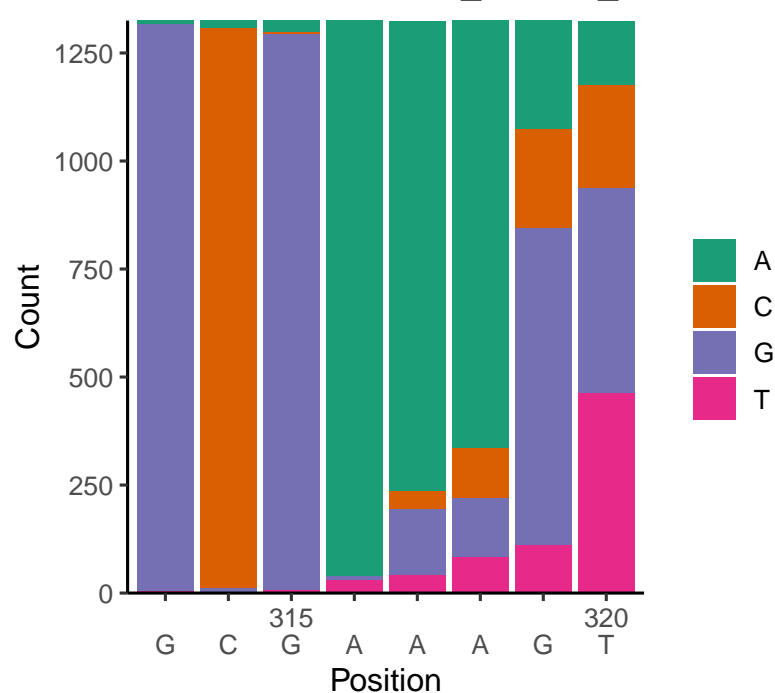
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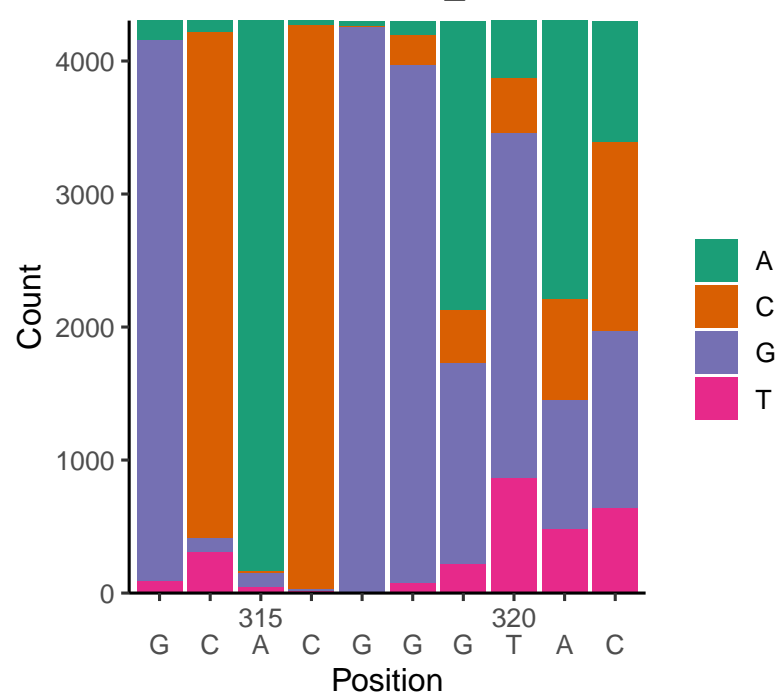
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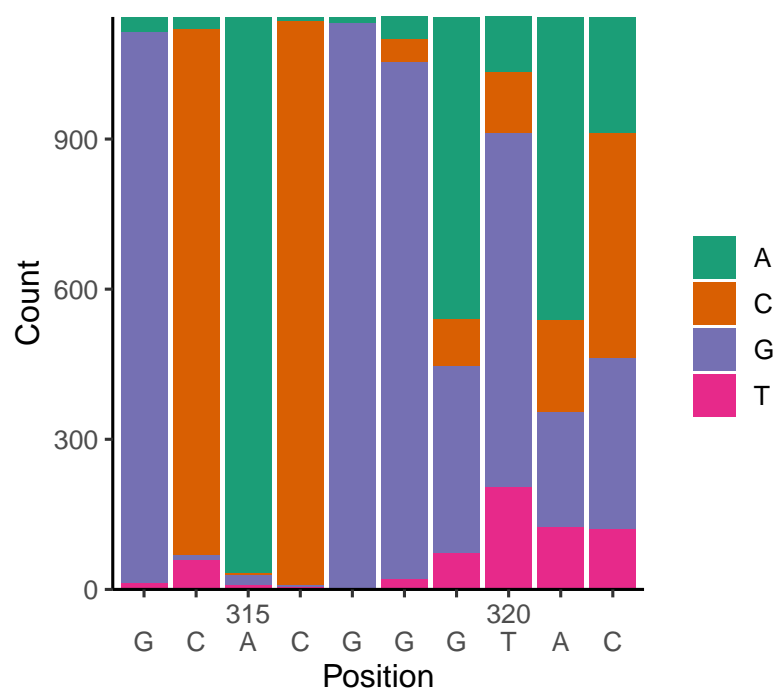
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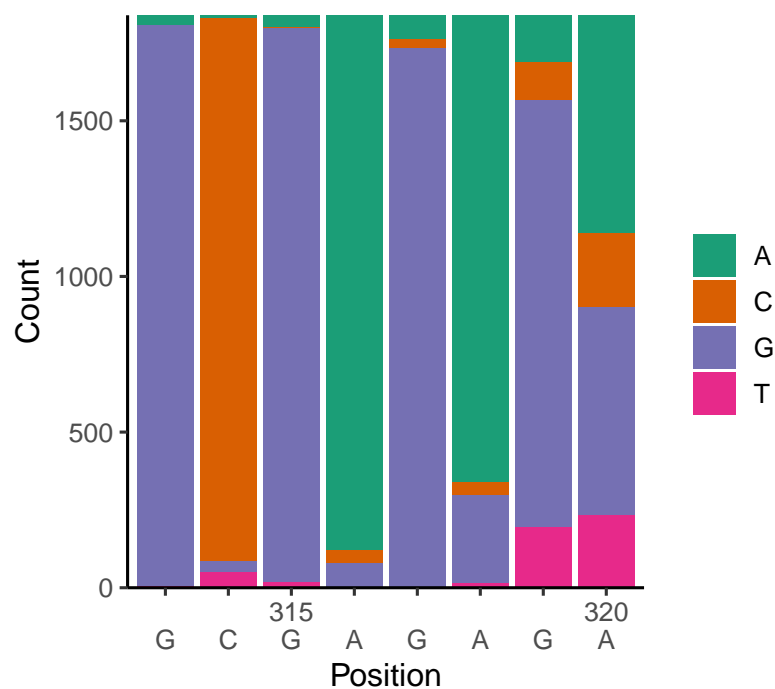
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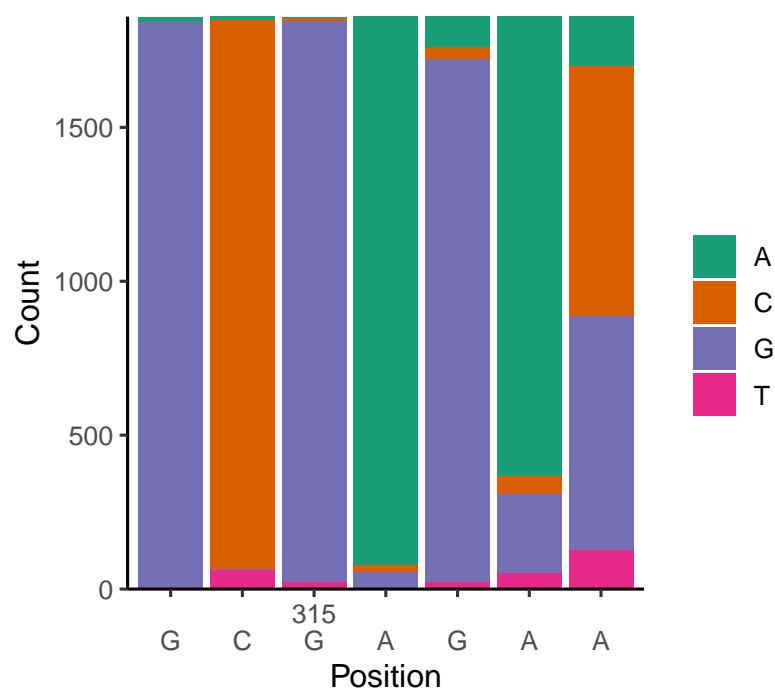
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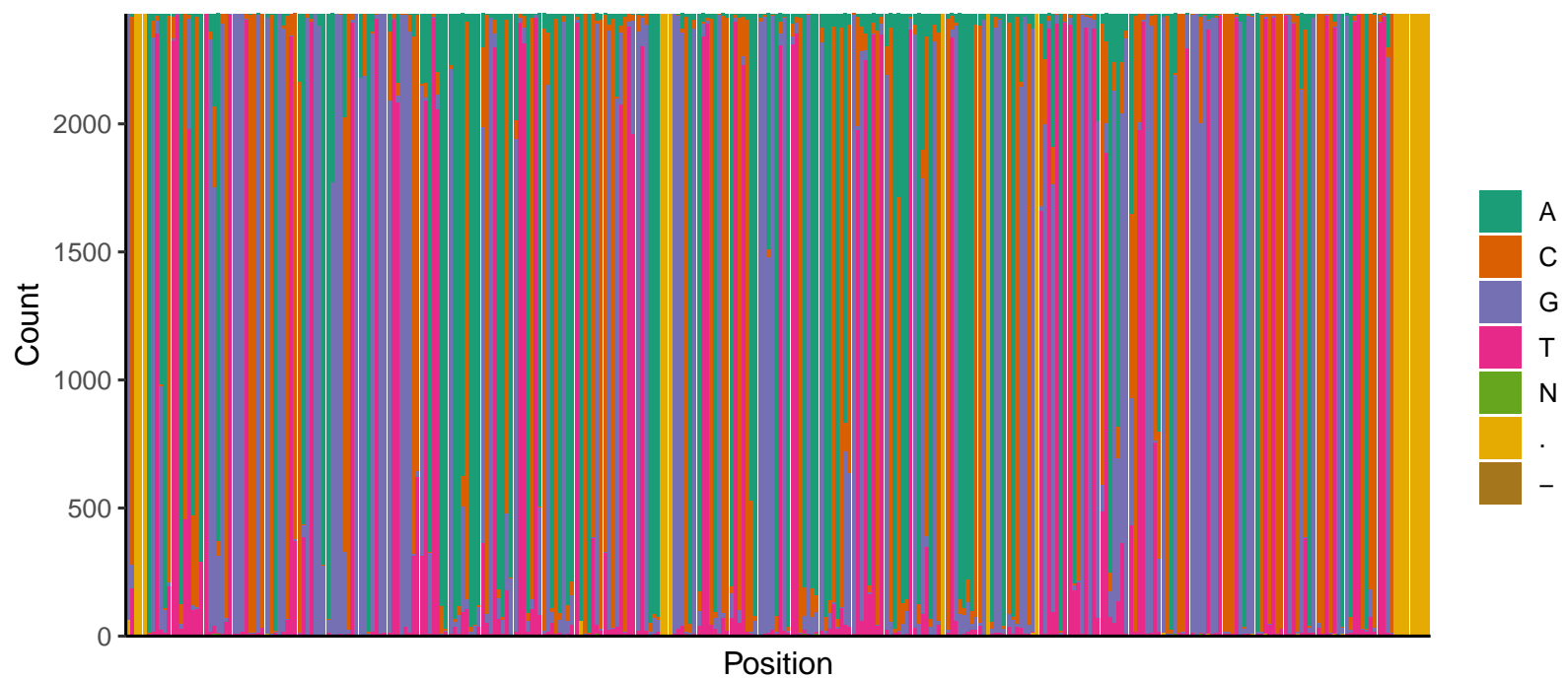
Gene IGHV4S10*01_A48G_T112C



Gene IGHV4-169*01_C4G_T60C_G61C_T163C_A164G_T169G_G172A_T189G_A196T



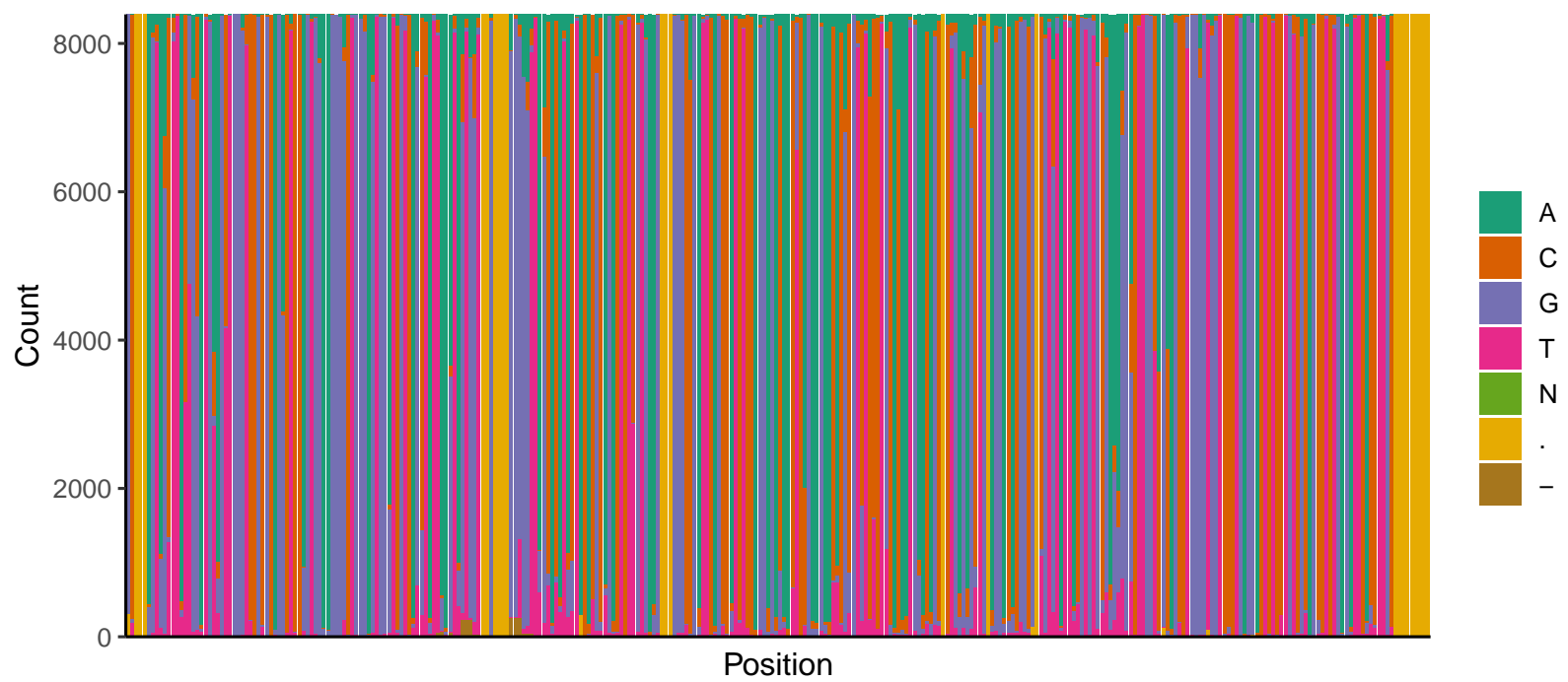
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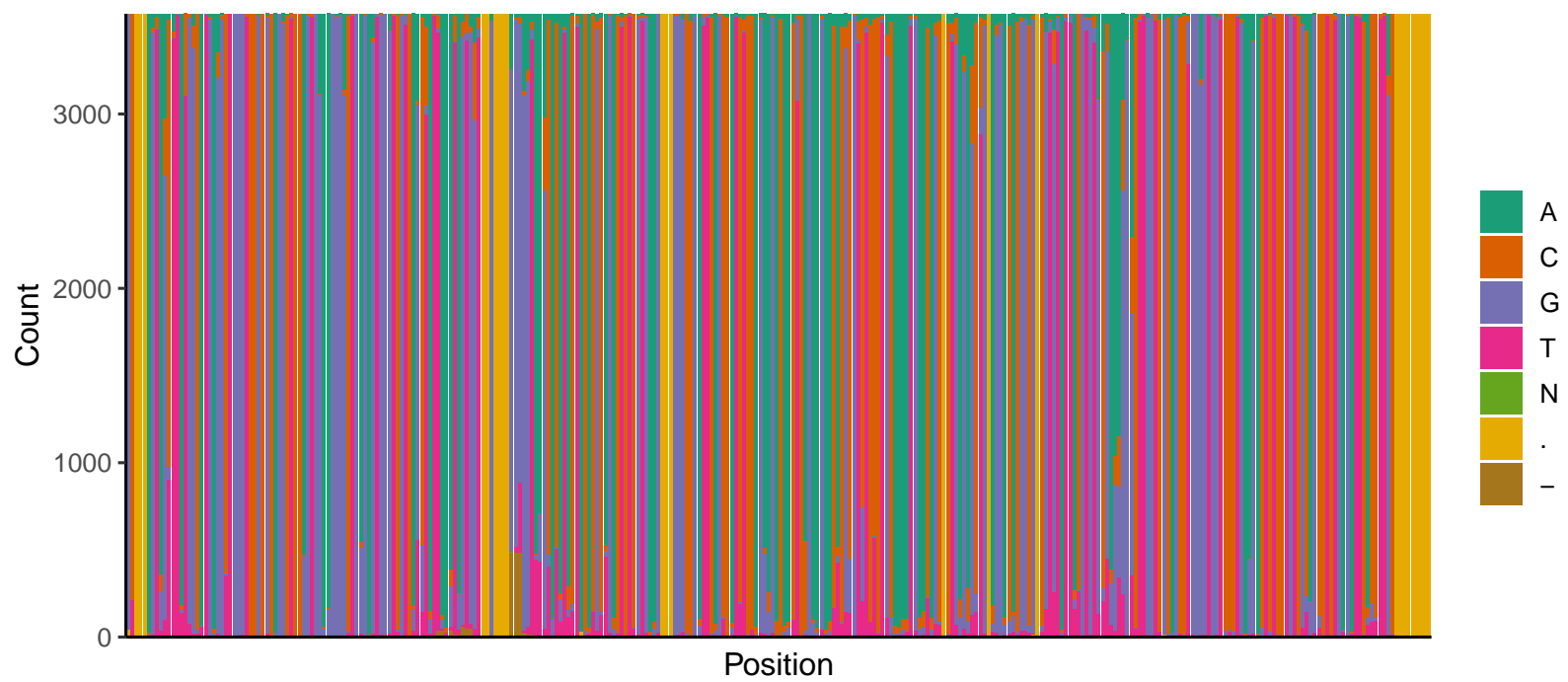
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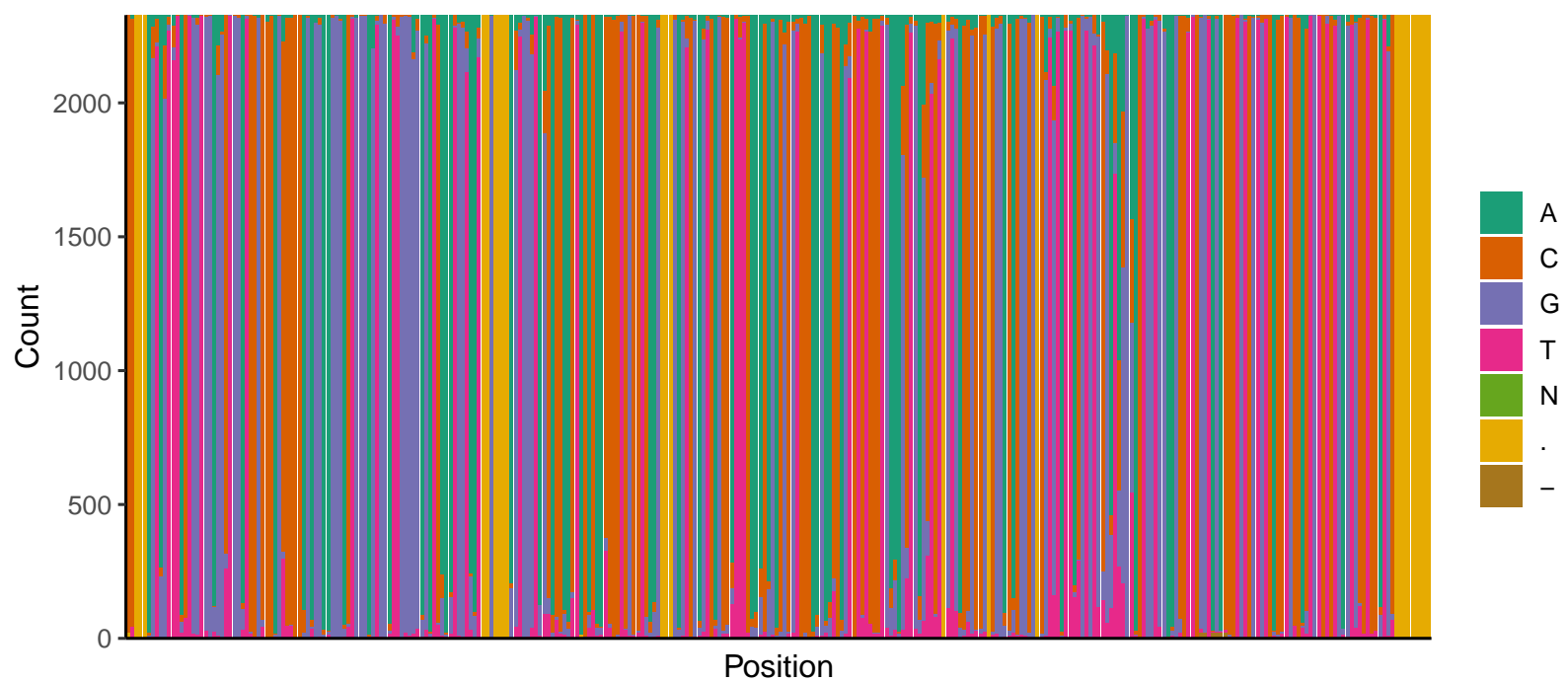
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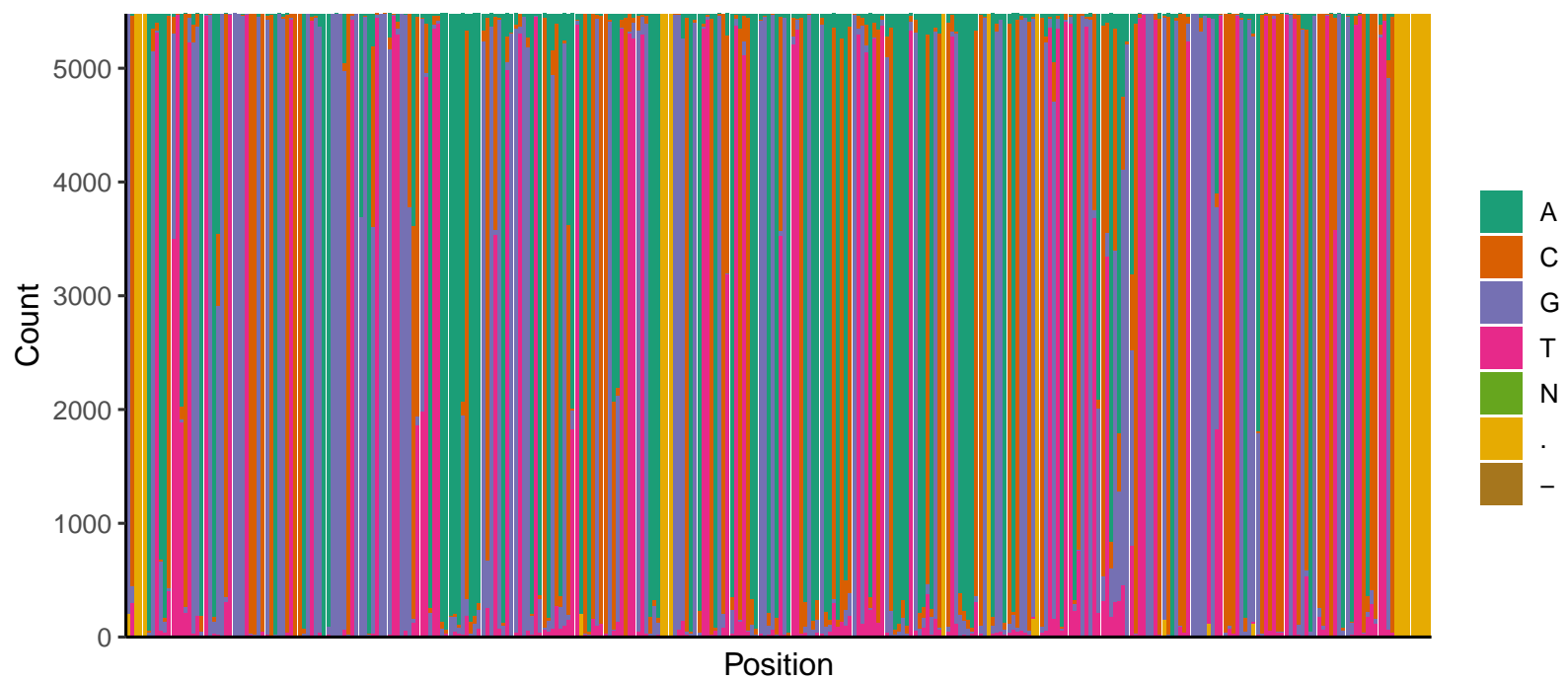
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Gene IGHV4-80*01_G70A_C90T_T109A_T189G_T196A



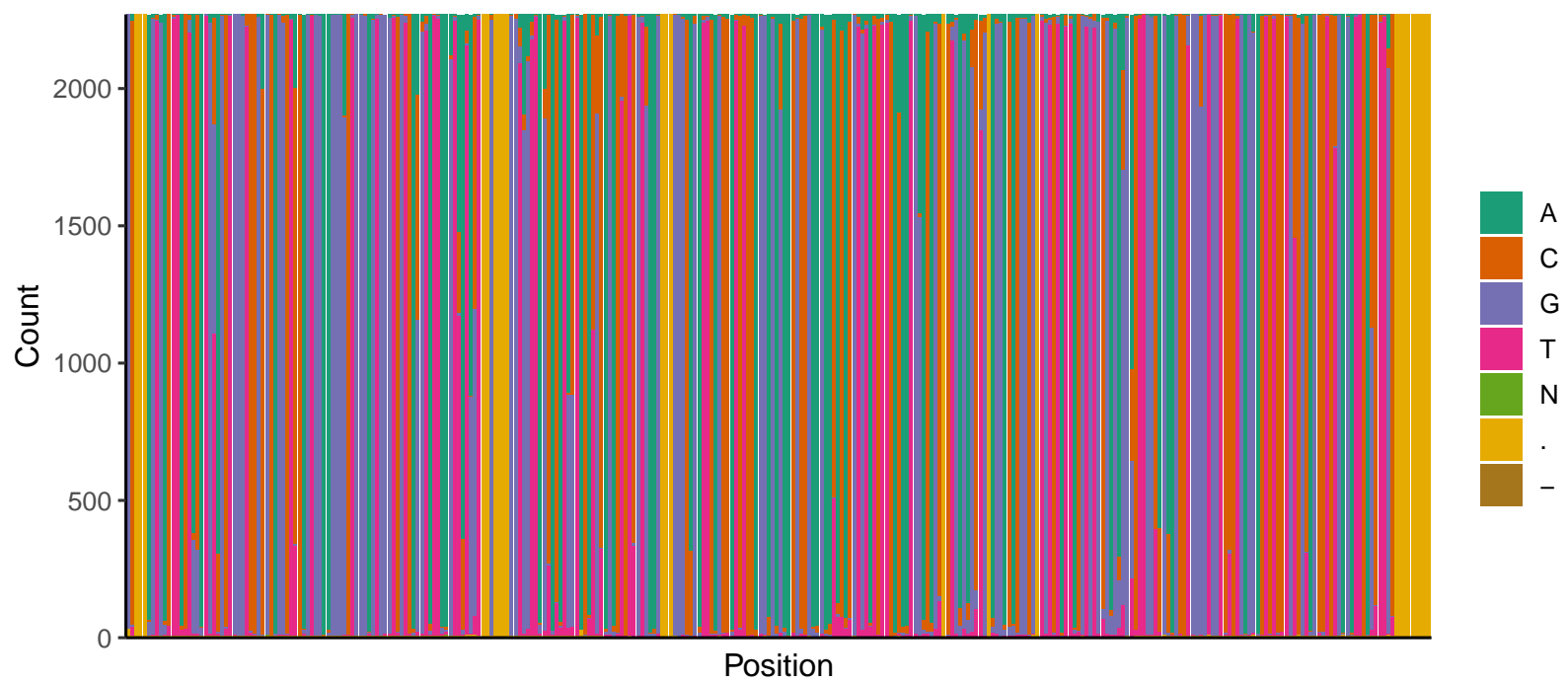
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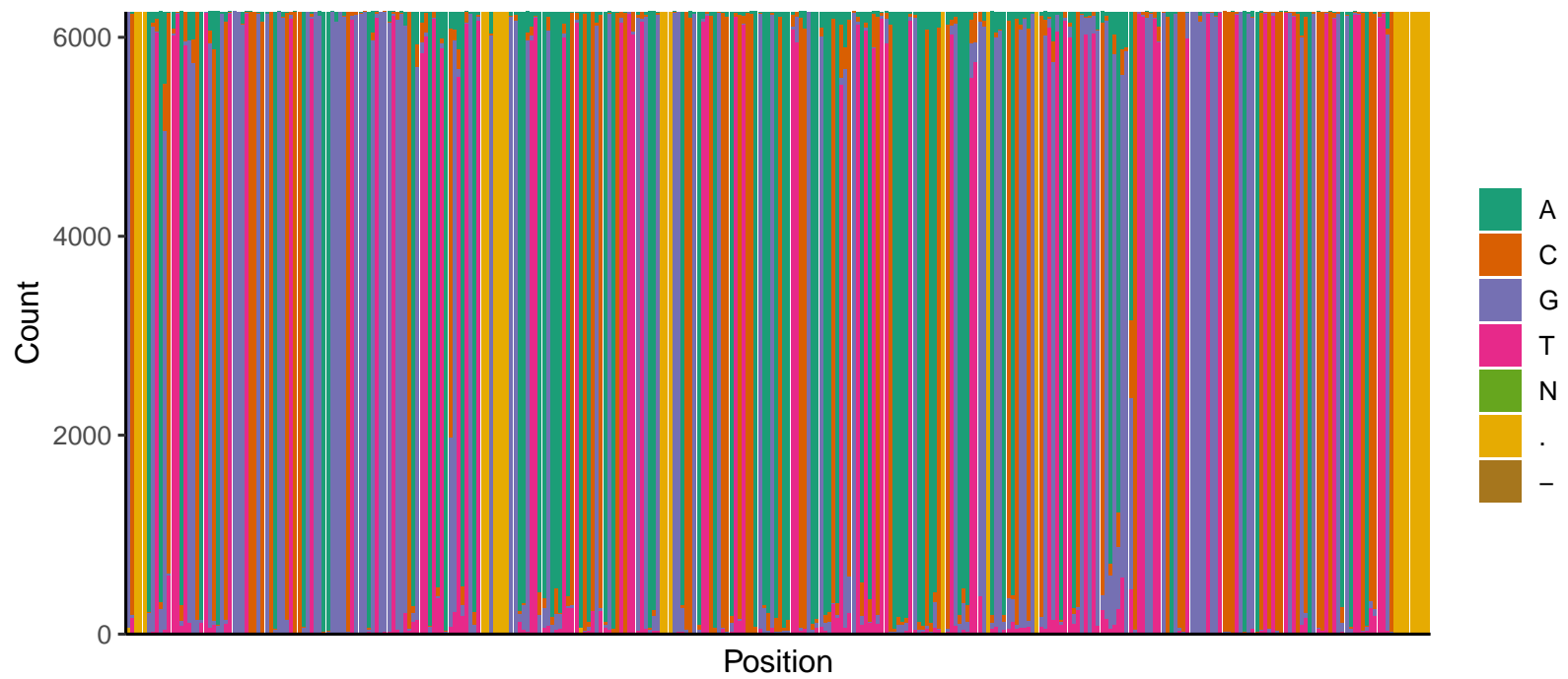
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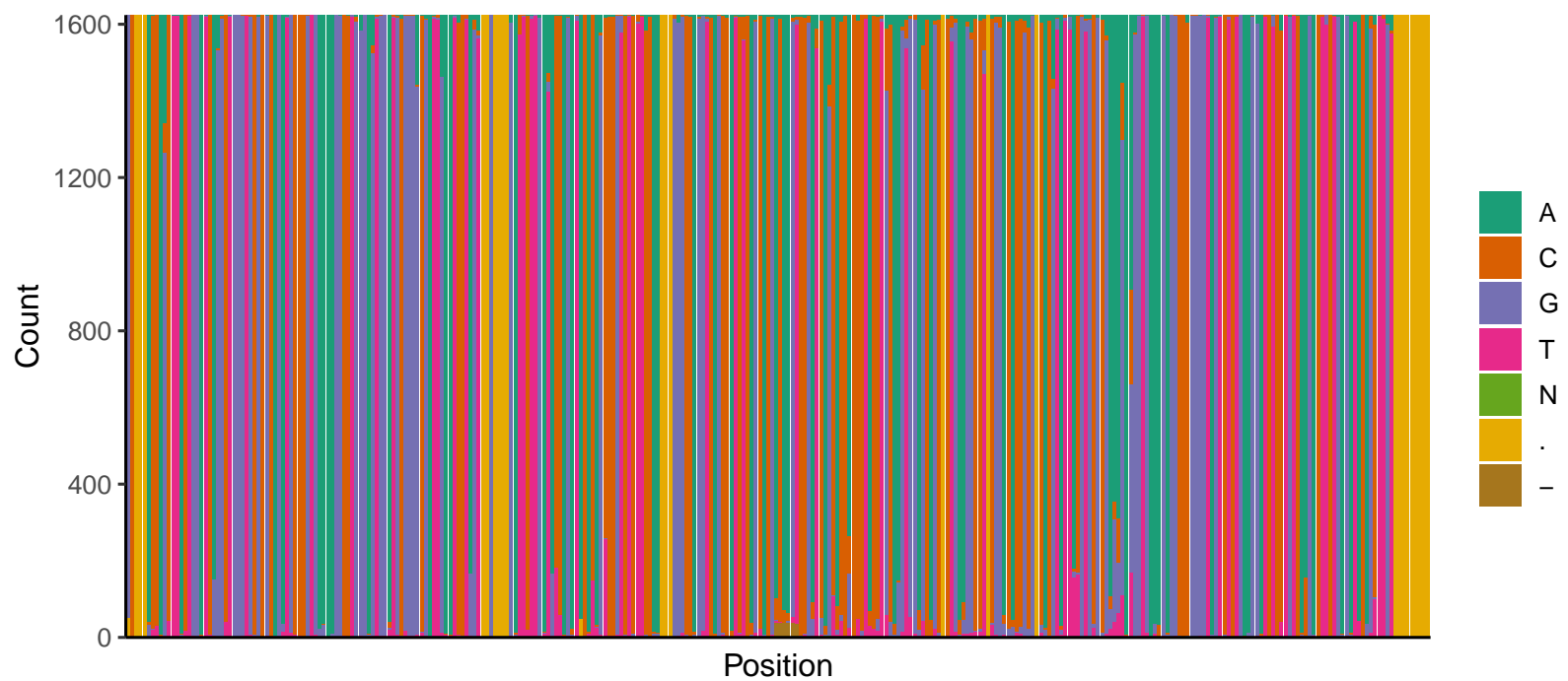
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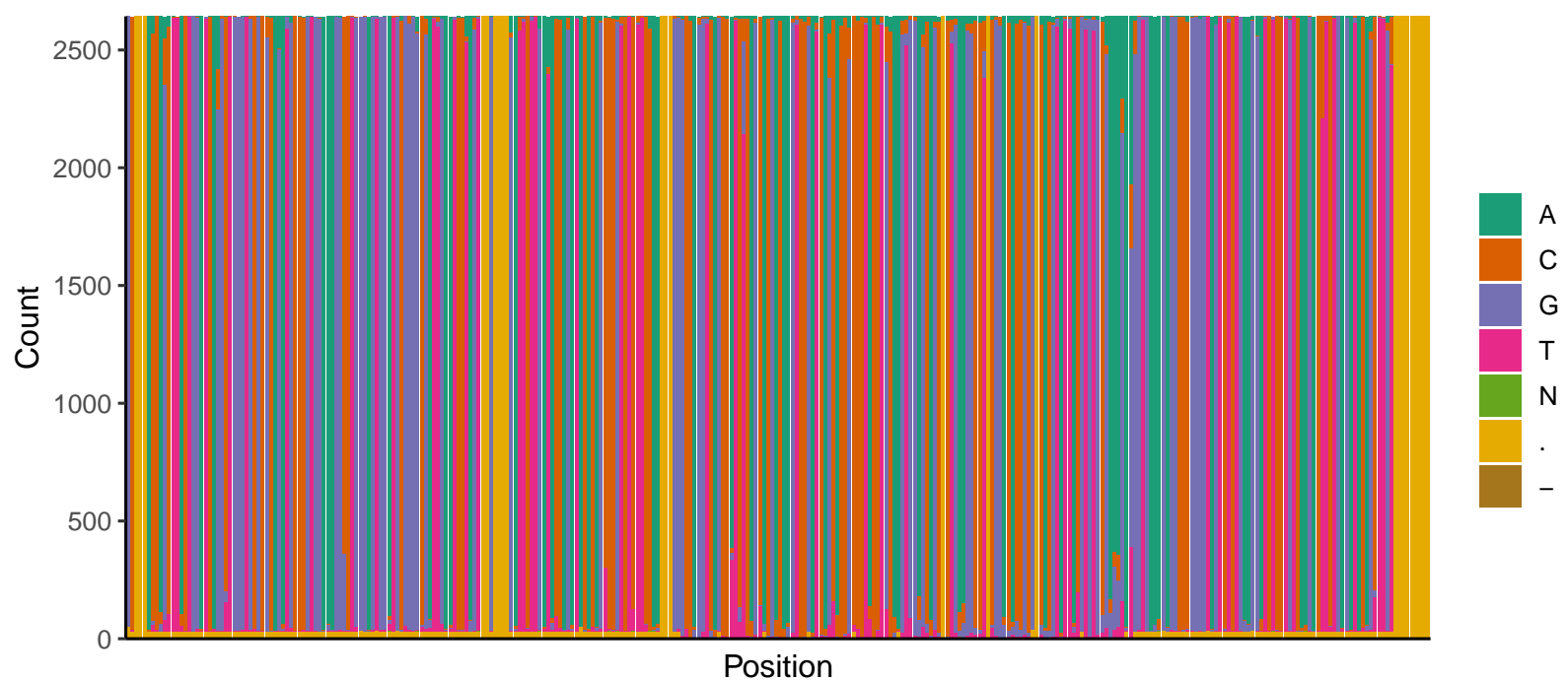
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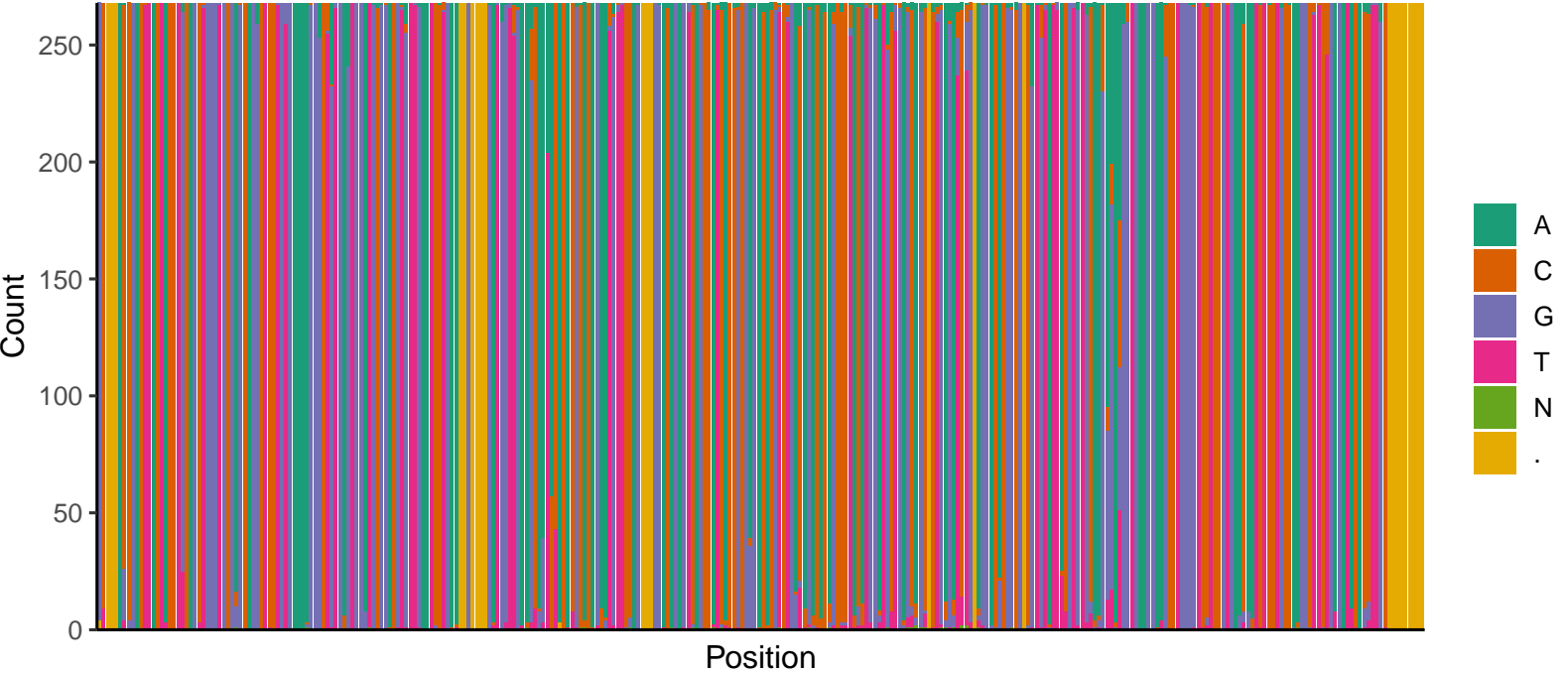
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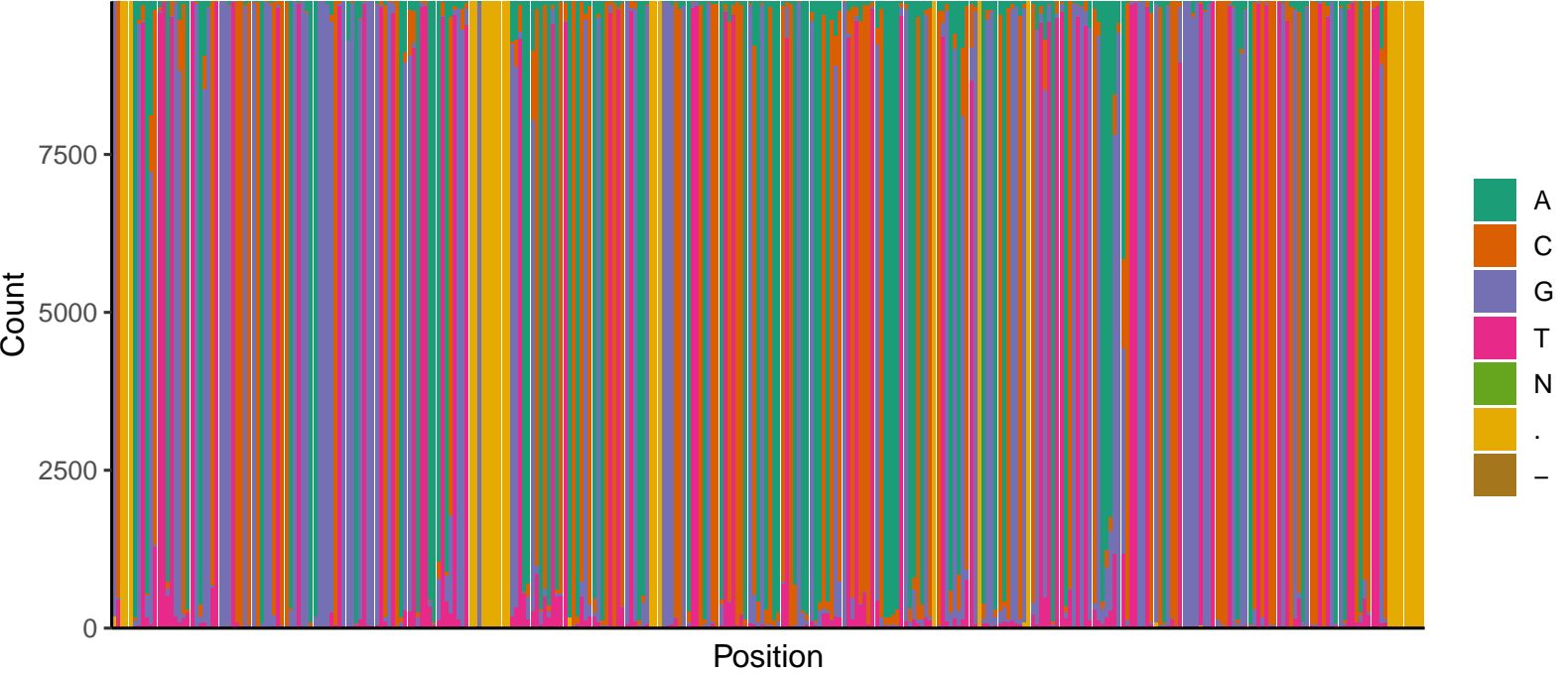
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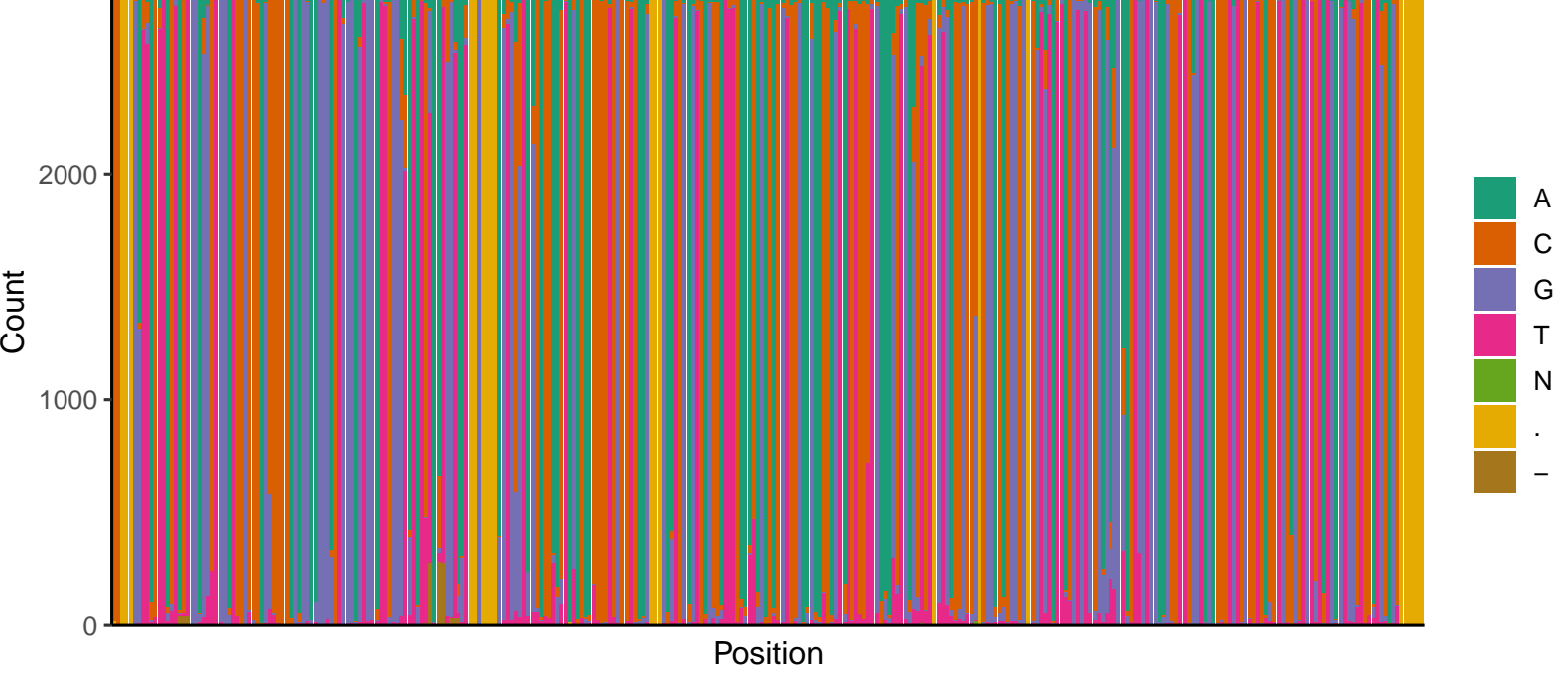
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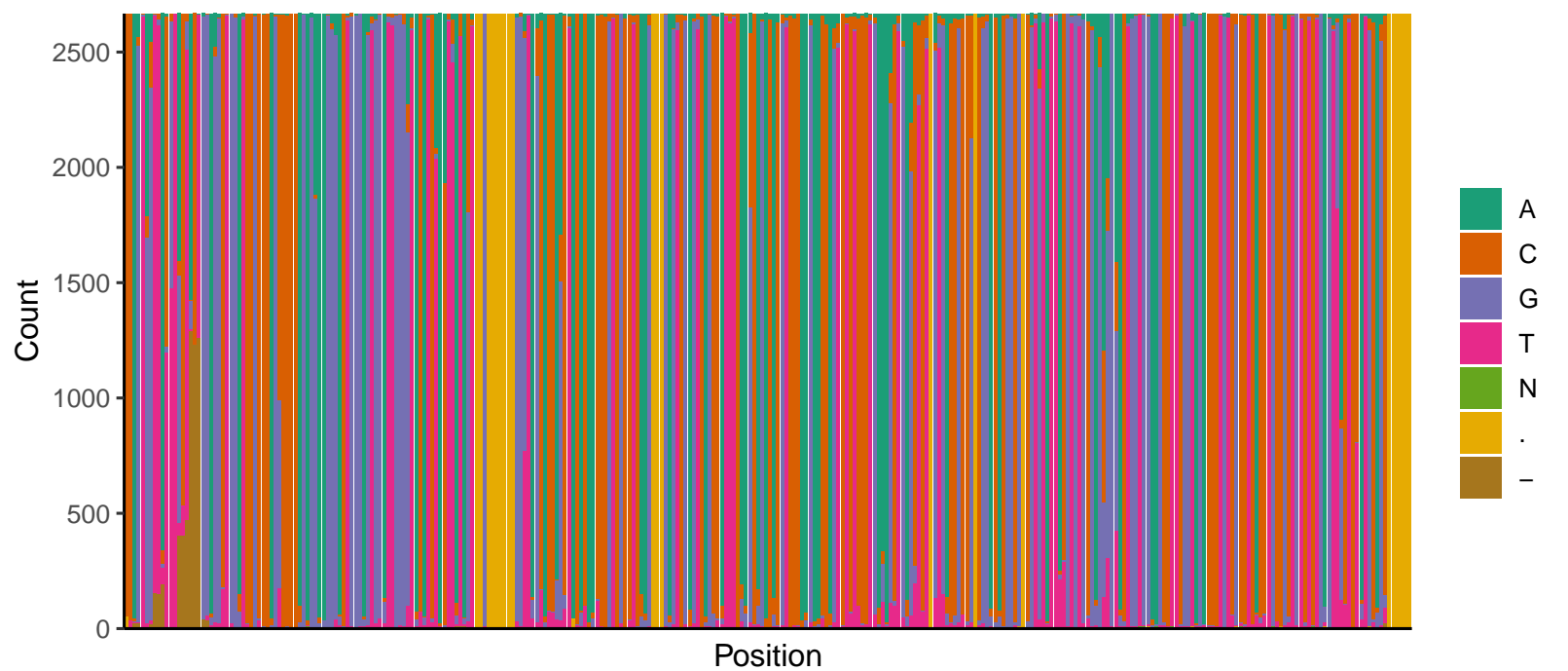
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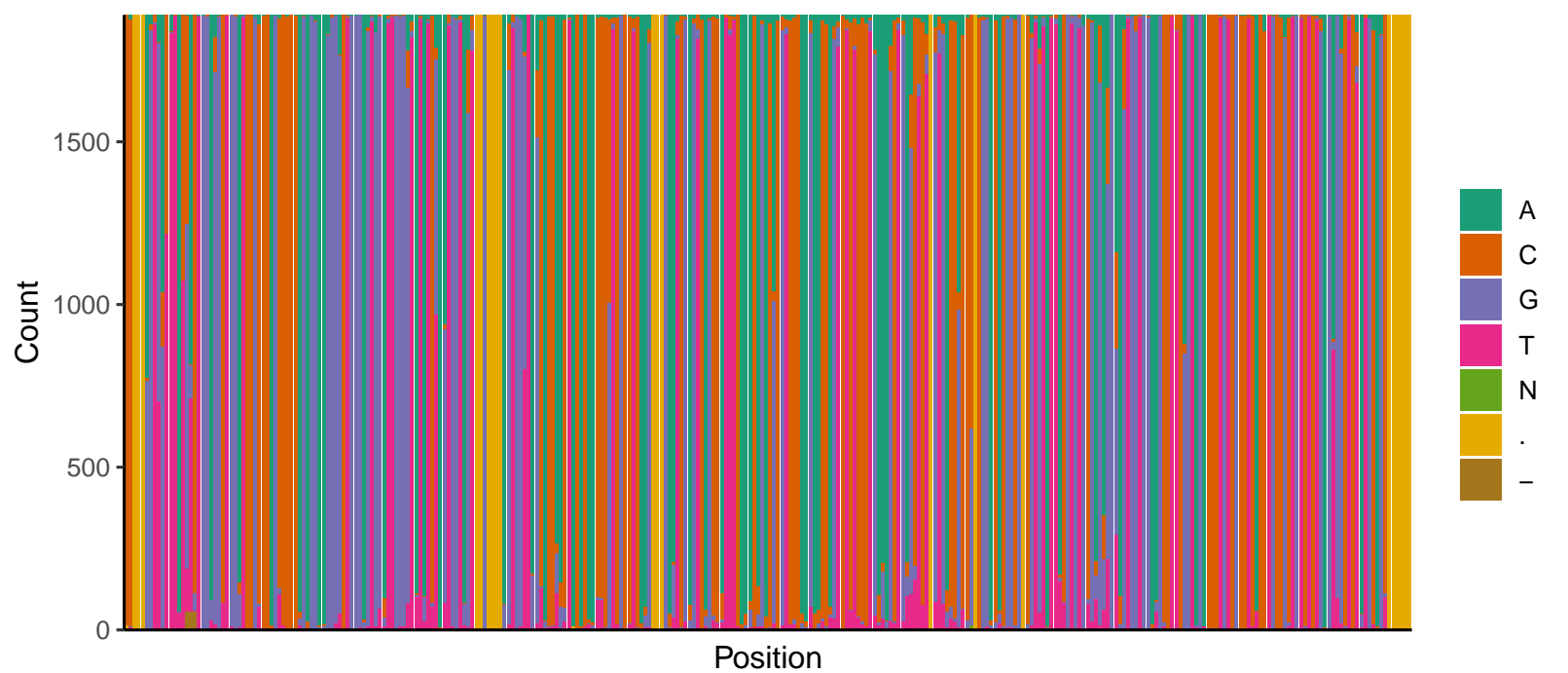
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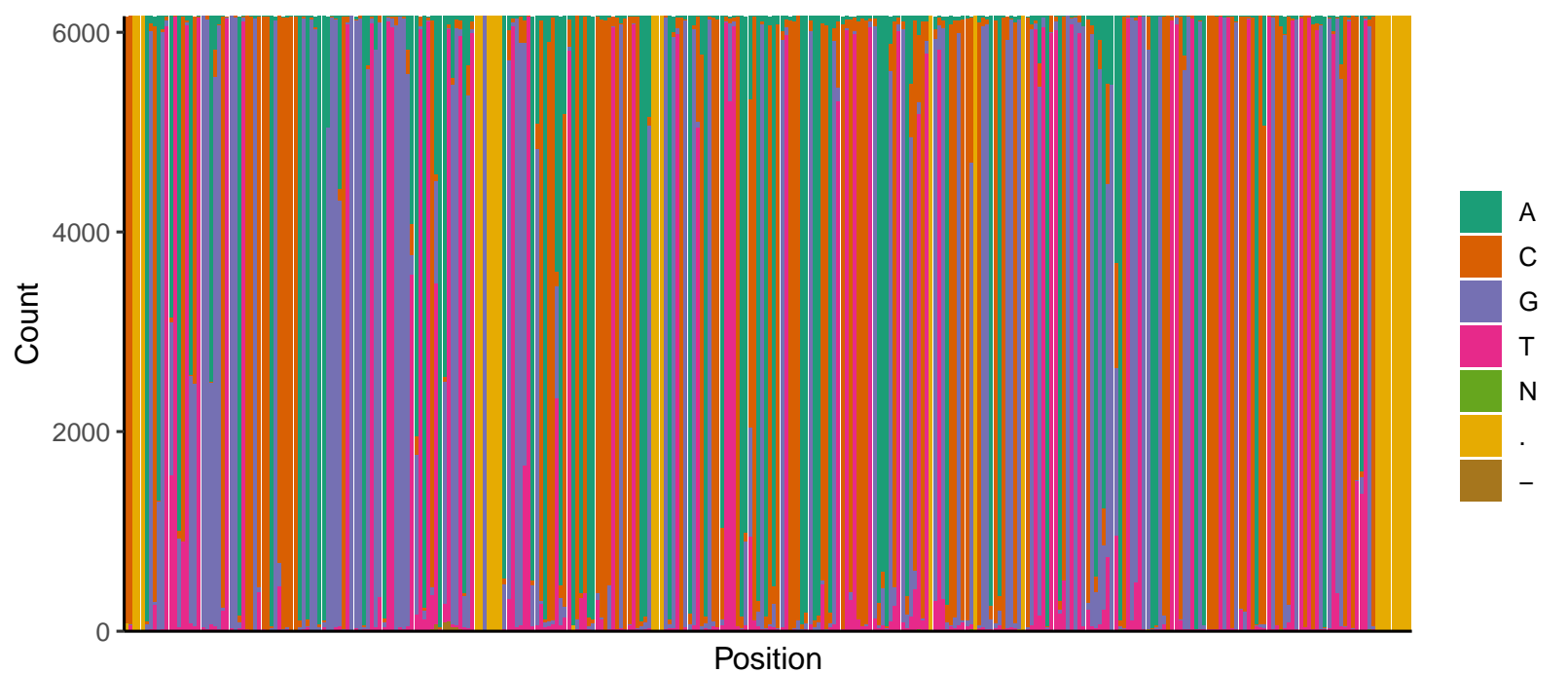
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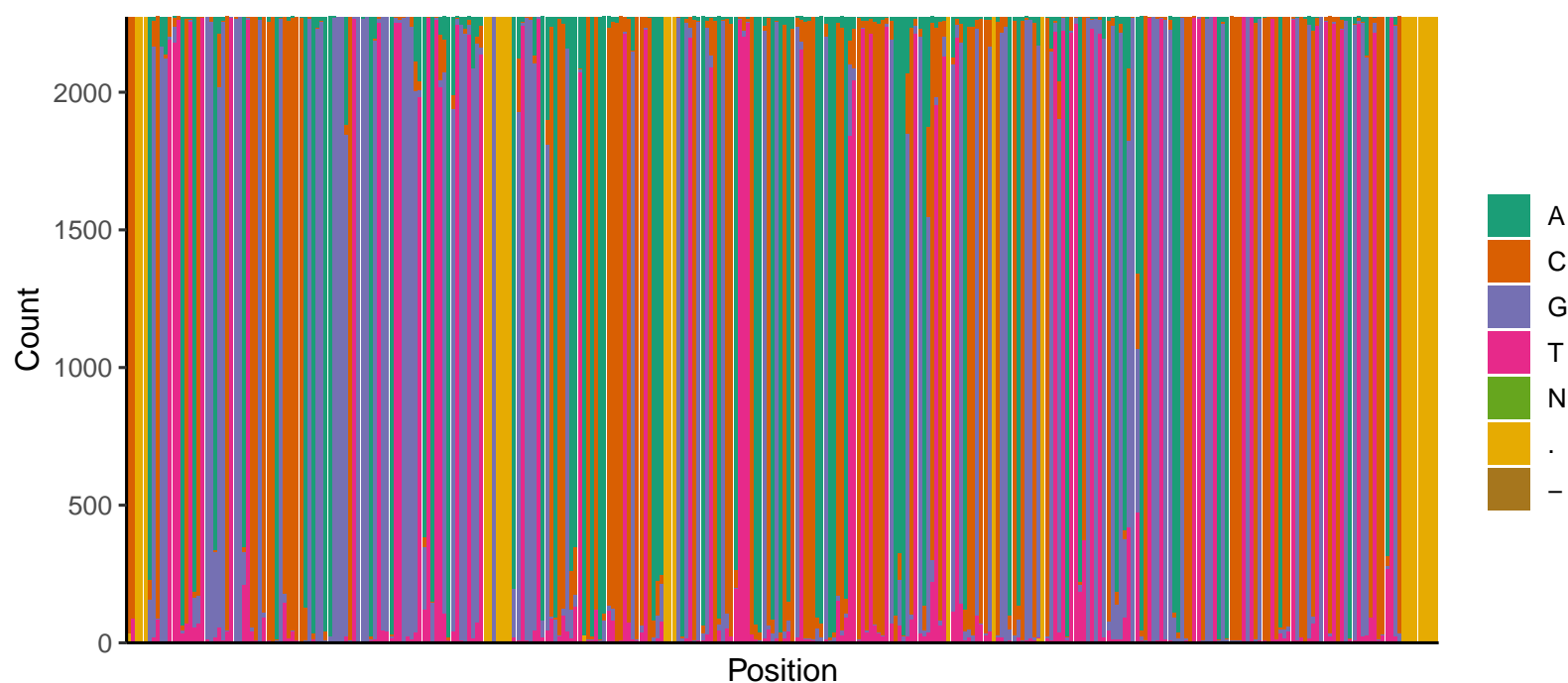
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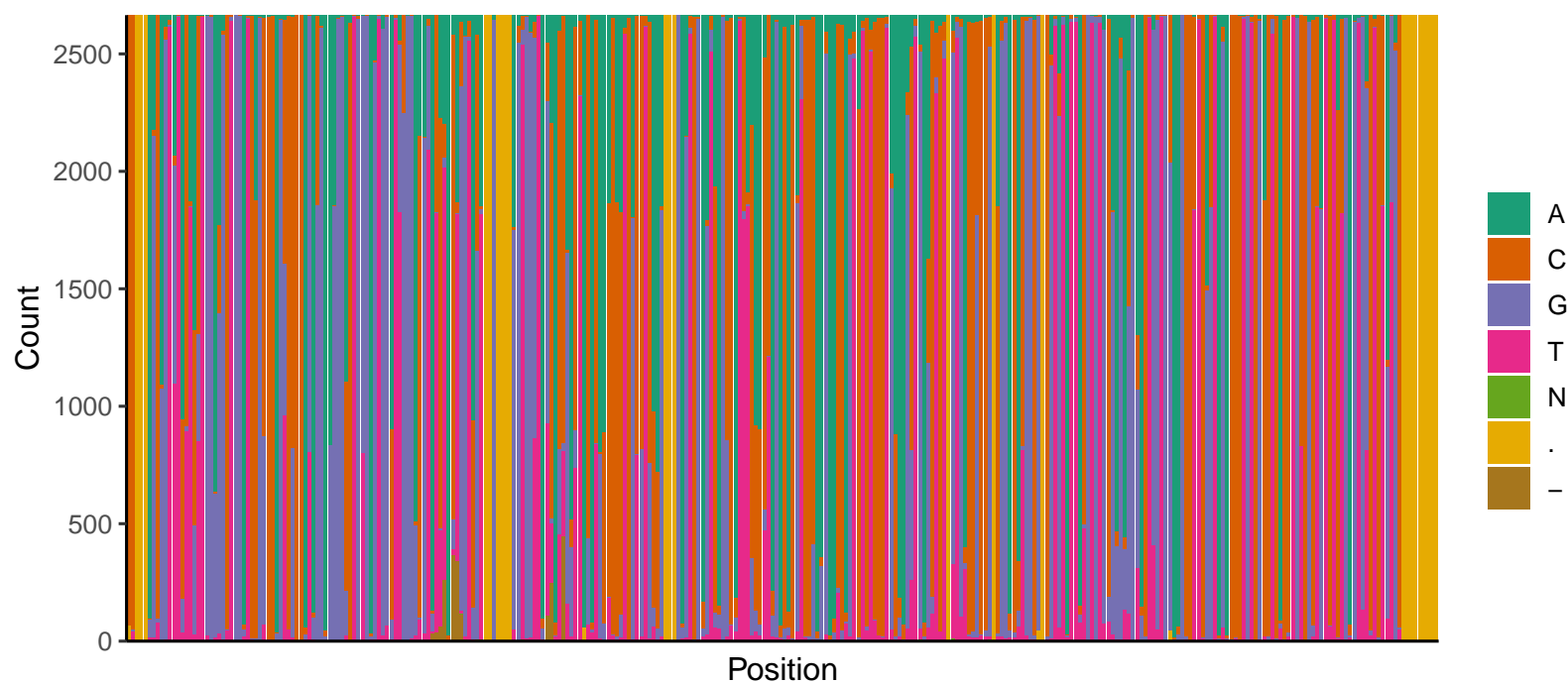
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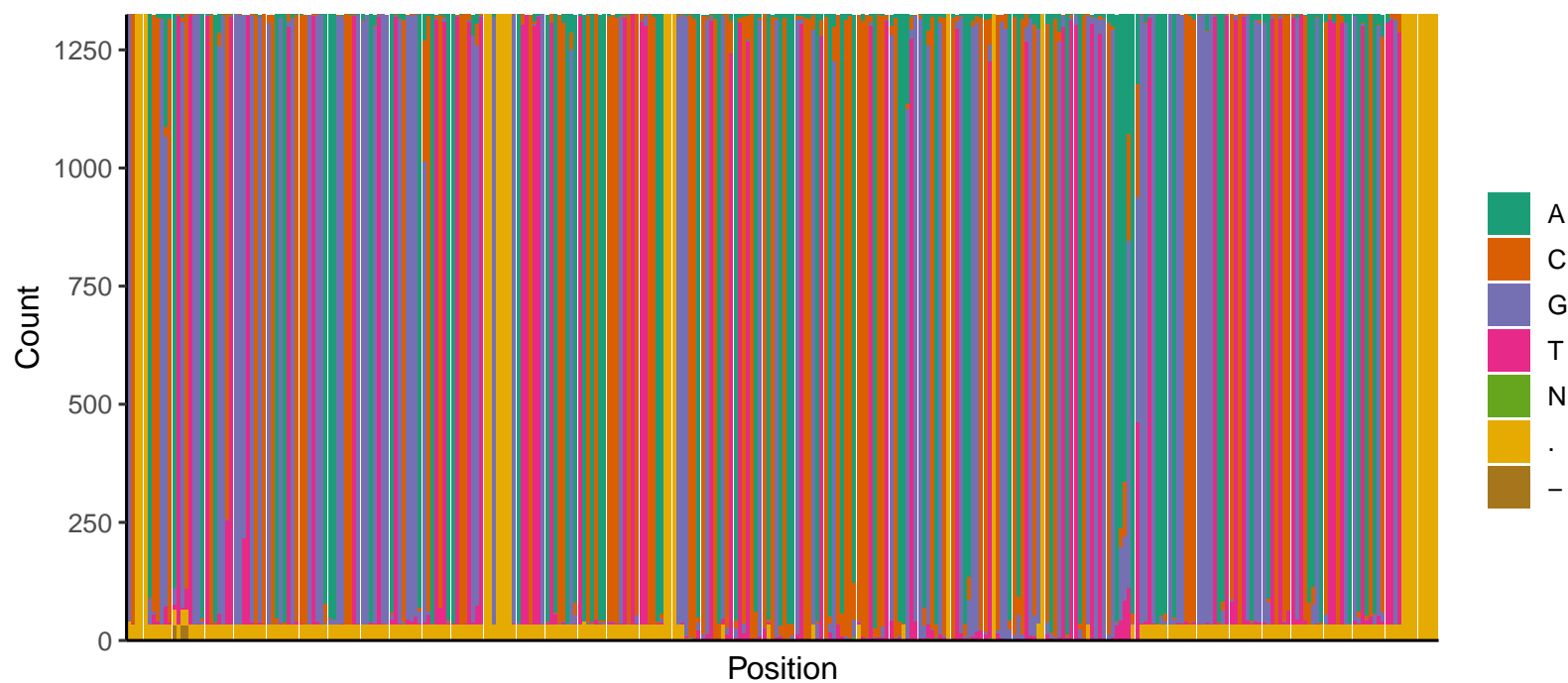
Gene IGHV4-165*01_A132G_C168T_A175G_T196G_C198A_G216A_C239G_G258T



Gene IGHV4-173*01_C4G



Gene IGHV5-43*01_A106G_C297T



Gene IGHV5-43*01_A109T_G110A_G164T_C165G_C225G_T231C_A259G



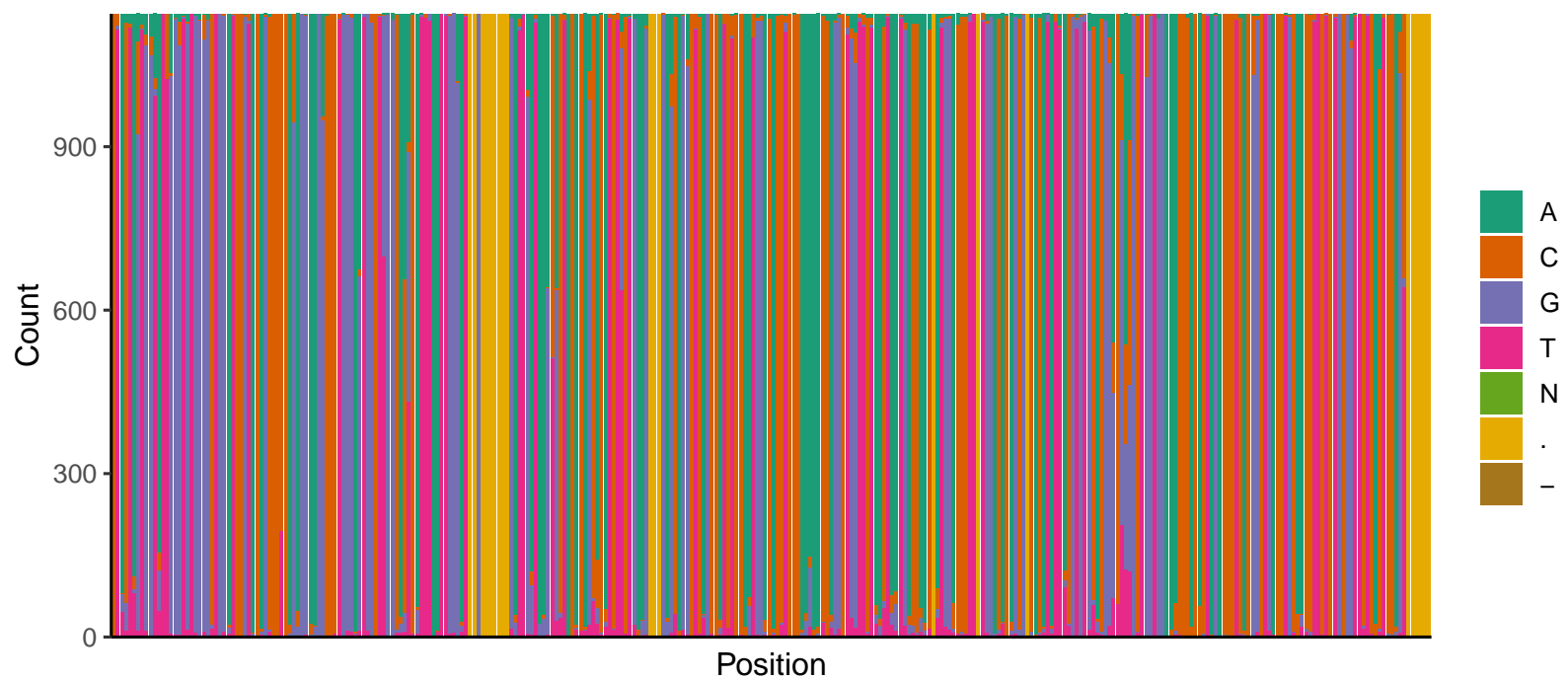
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Gene IGHV2S1*01_T210G



Gene IGHV2S1*01_T210G_G289T



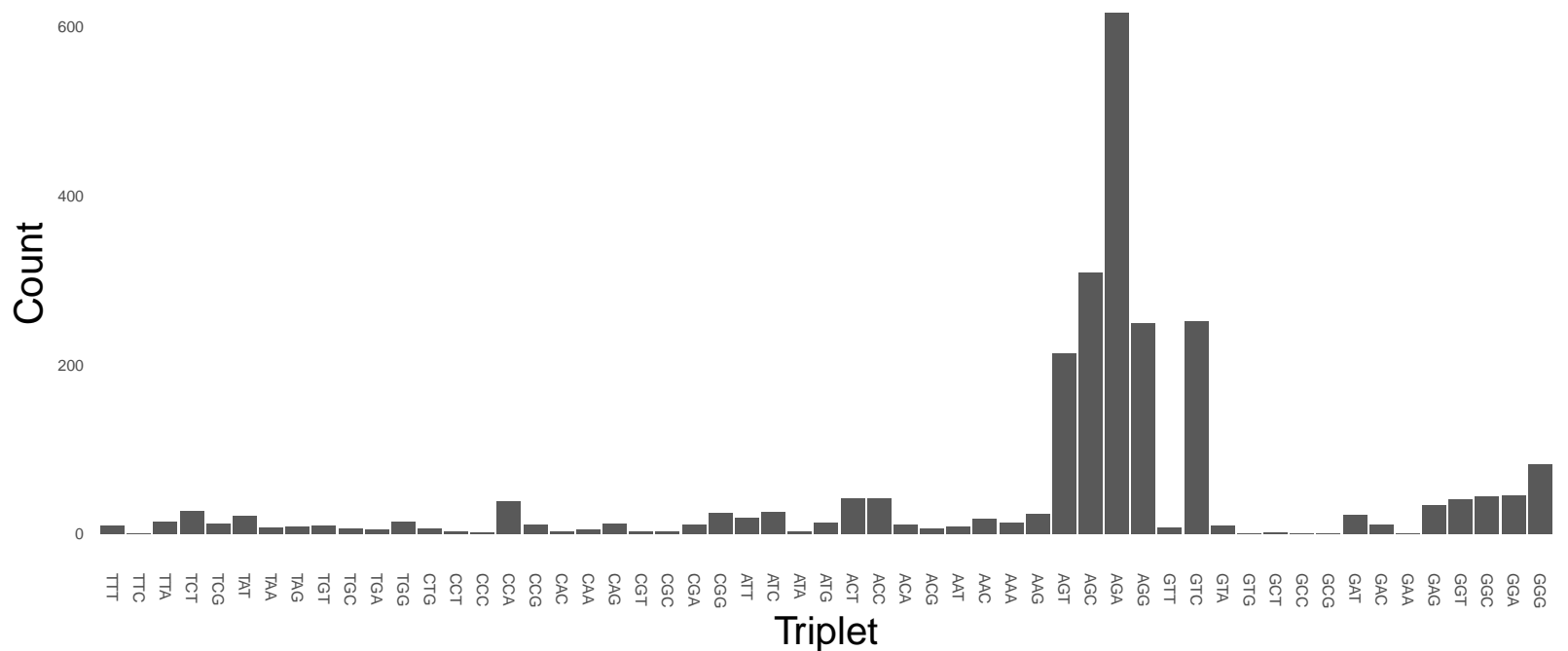
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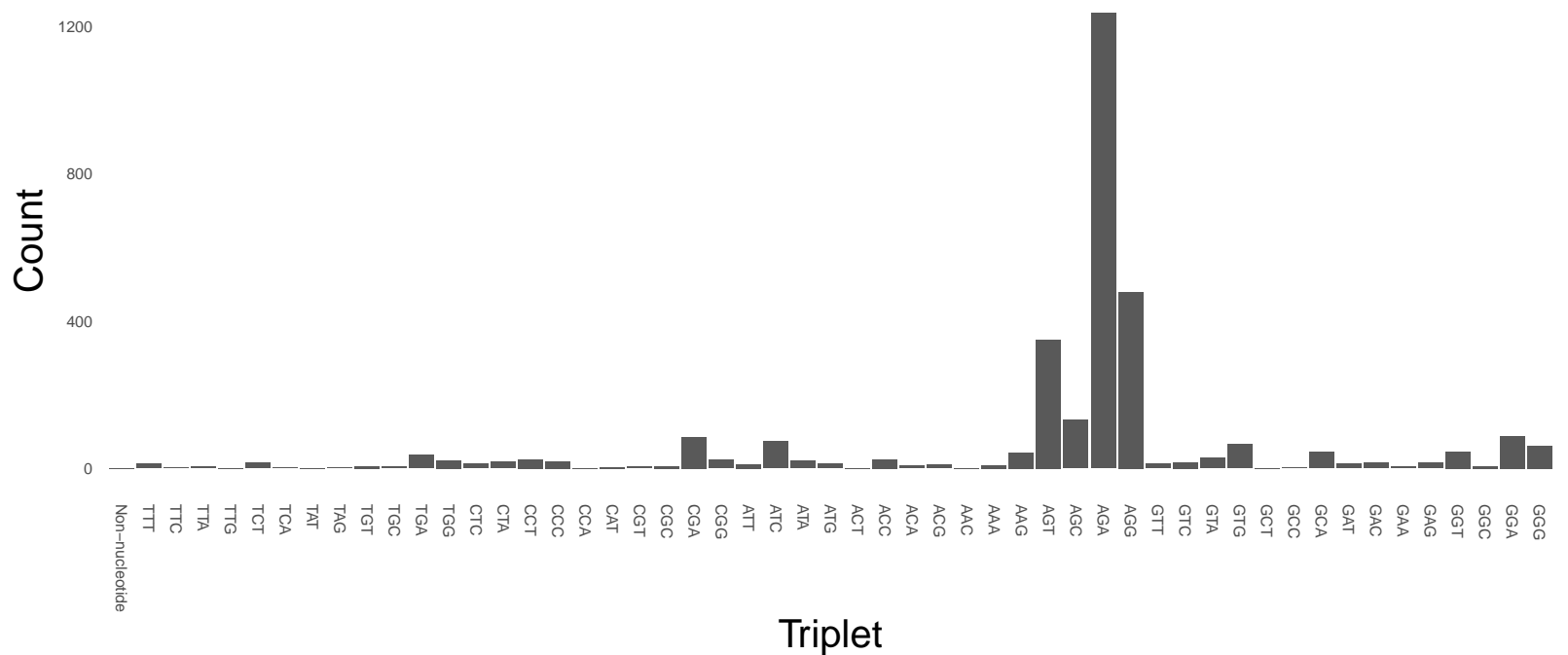
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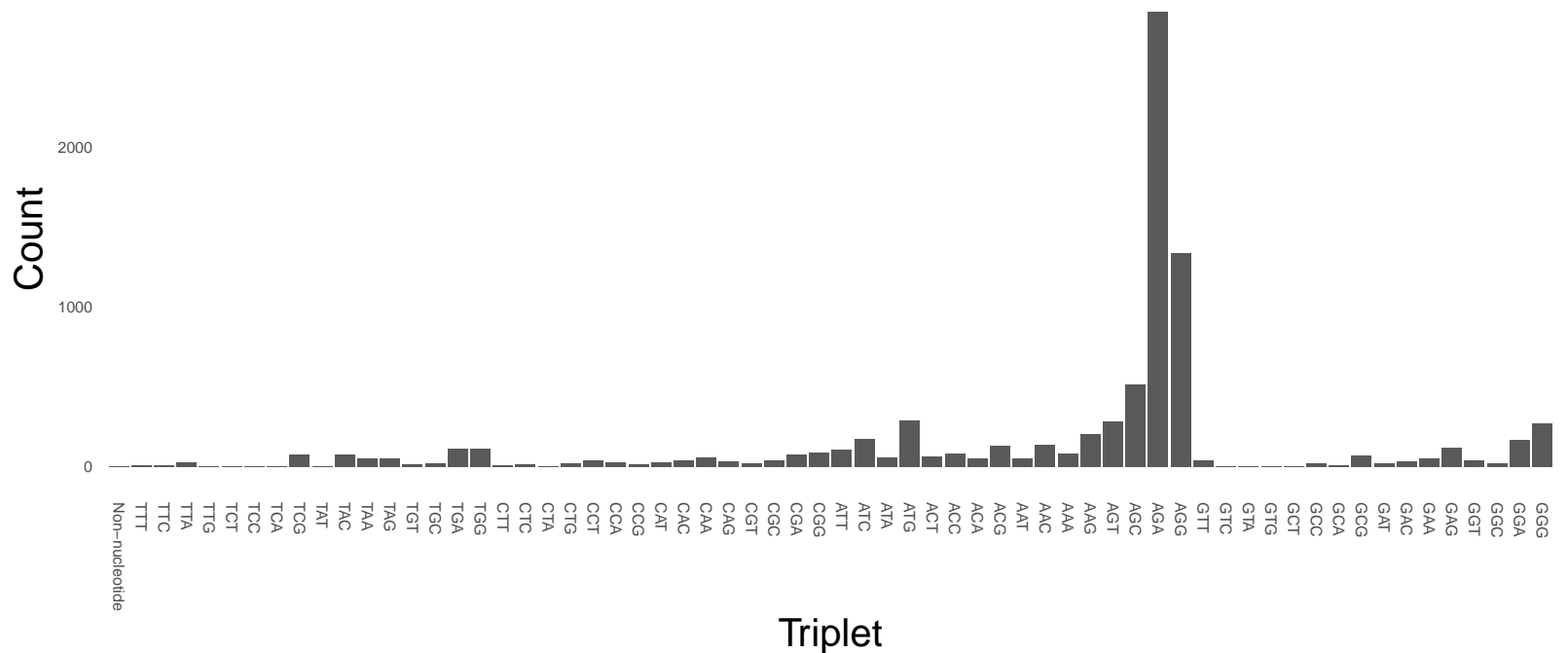
IGHV3-38*01_G106A_C109T_A192G- Final 3 nucleotides as a triplet



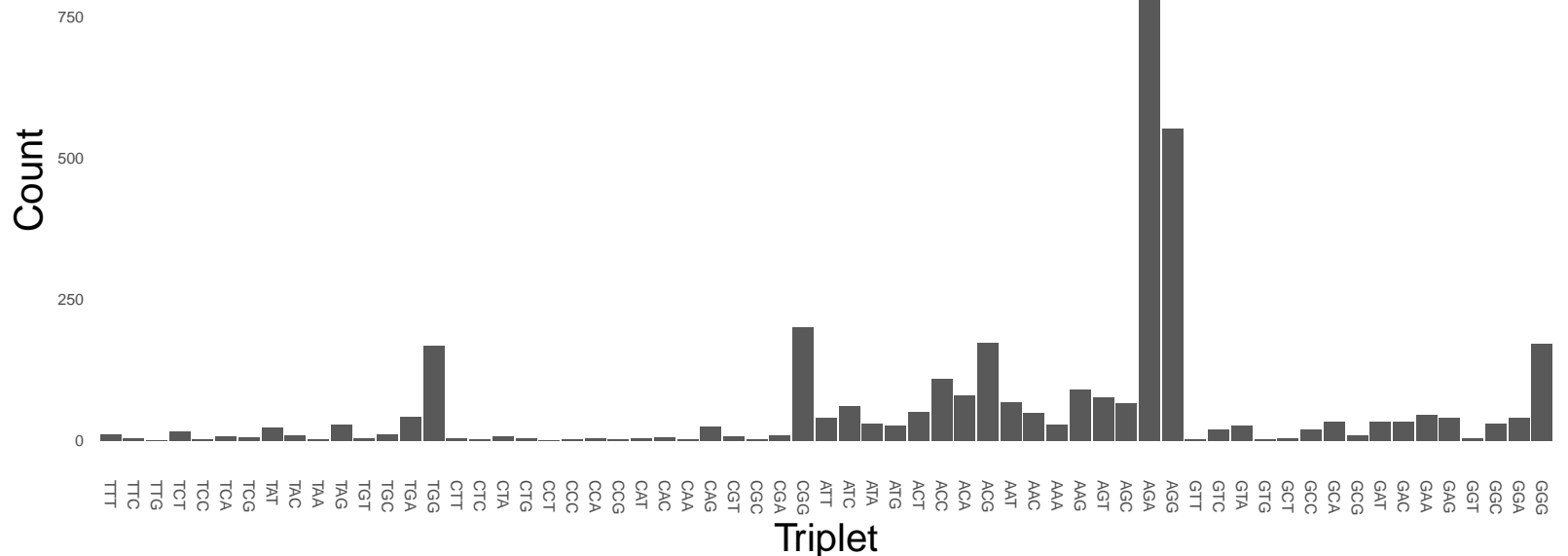
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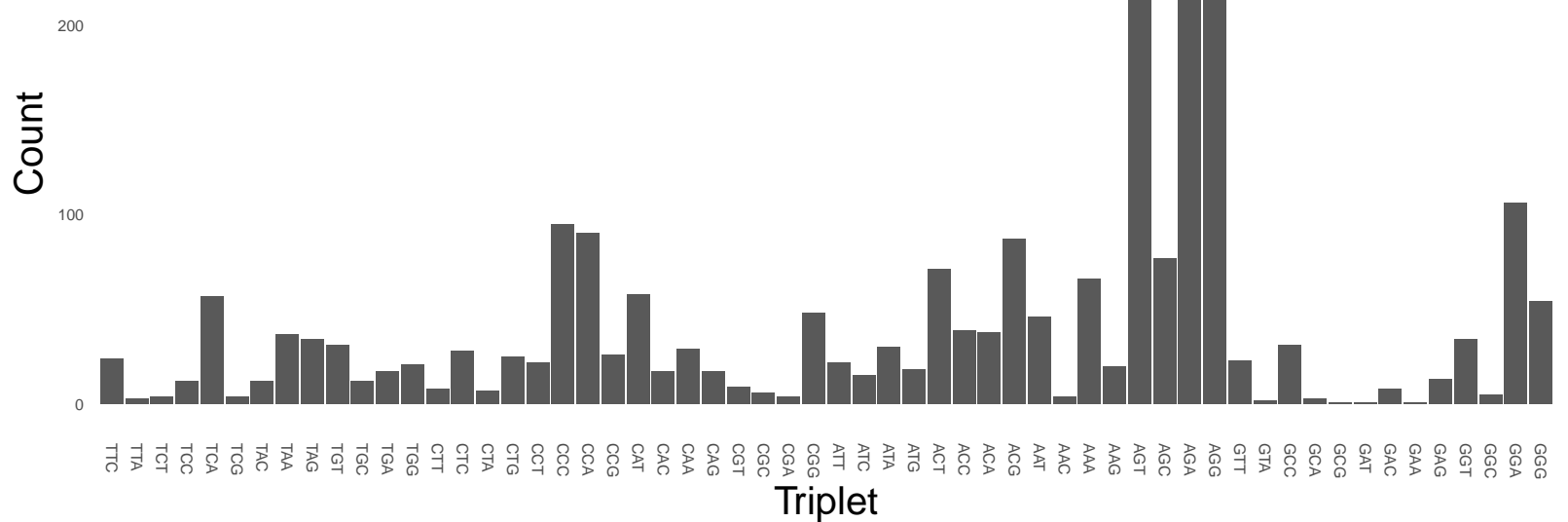
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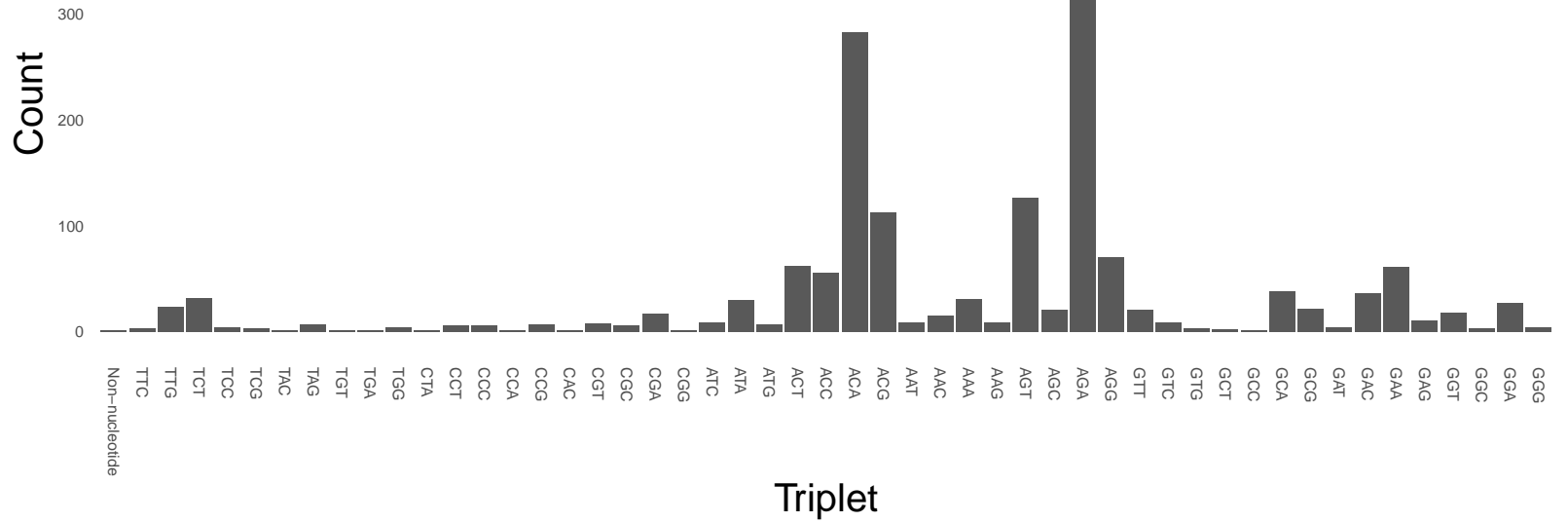
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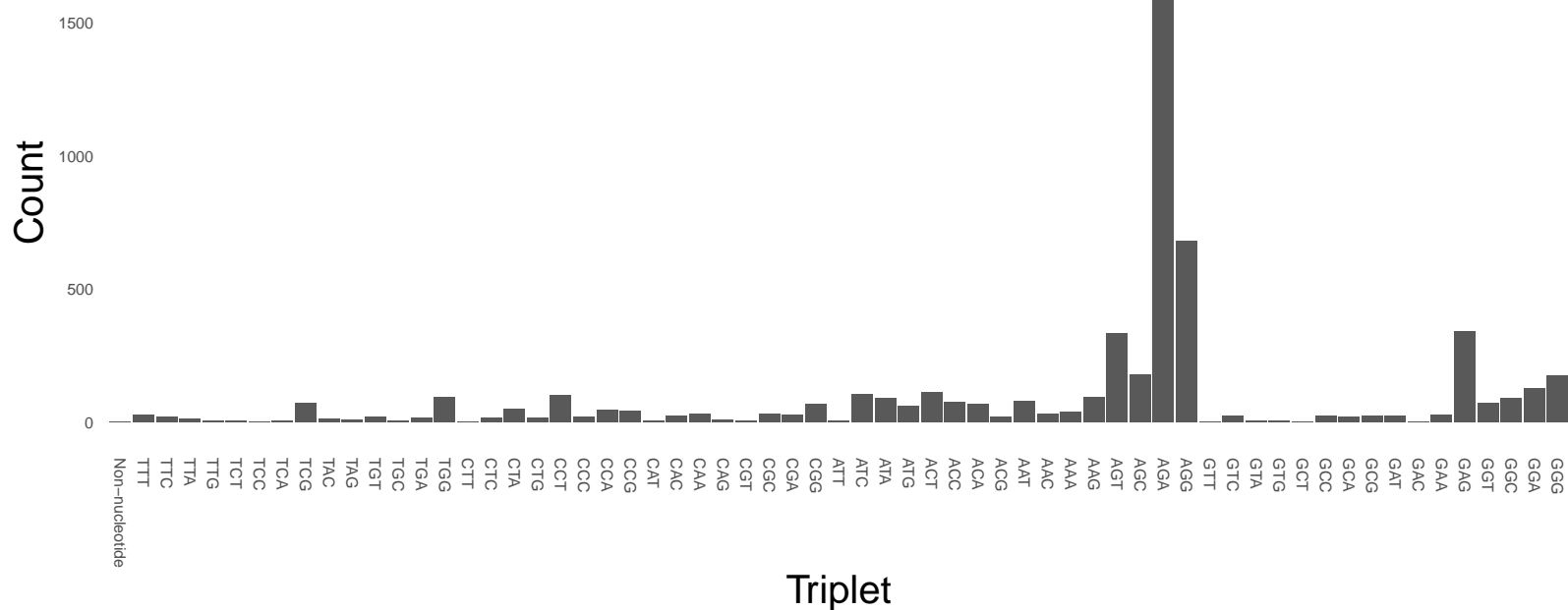
IGHV4-80*01_C60T_C61G_G70A_T189G_T196A- Final 3 nucleotides as a triplet



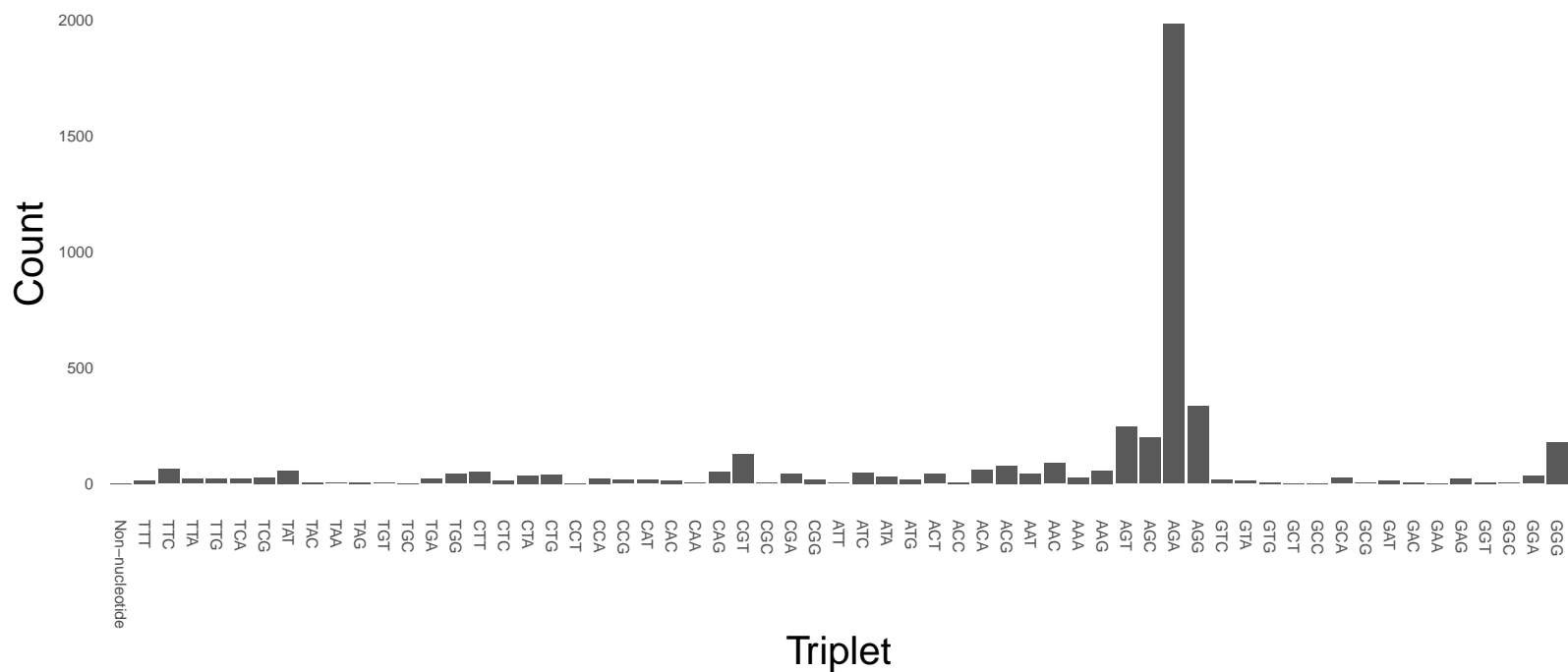
IGHV4-80*01_G70A_C90T_T109A_T189G_T196A- Final 3 nucleotides as a triplet



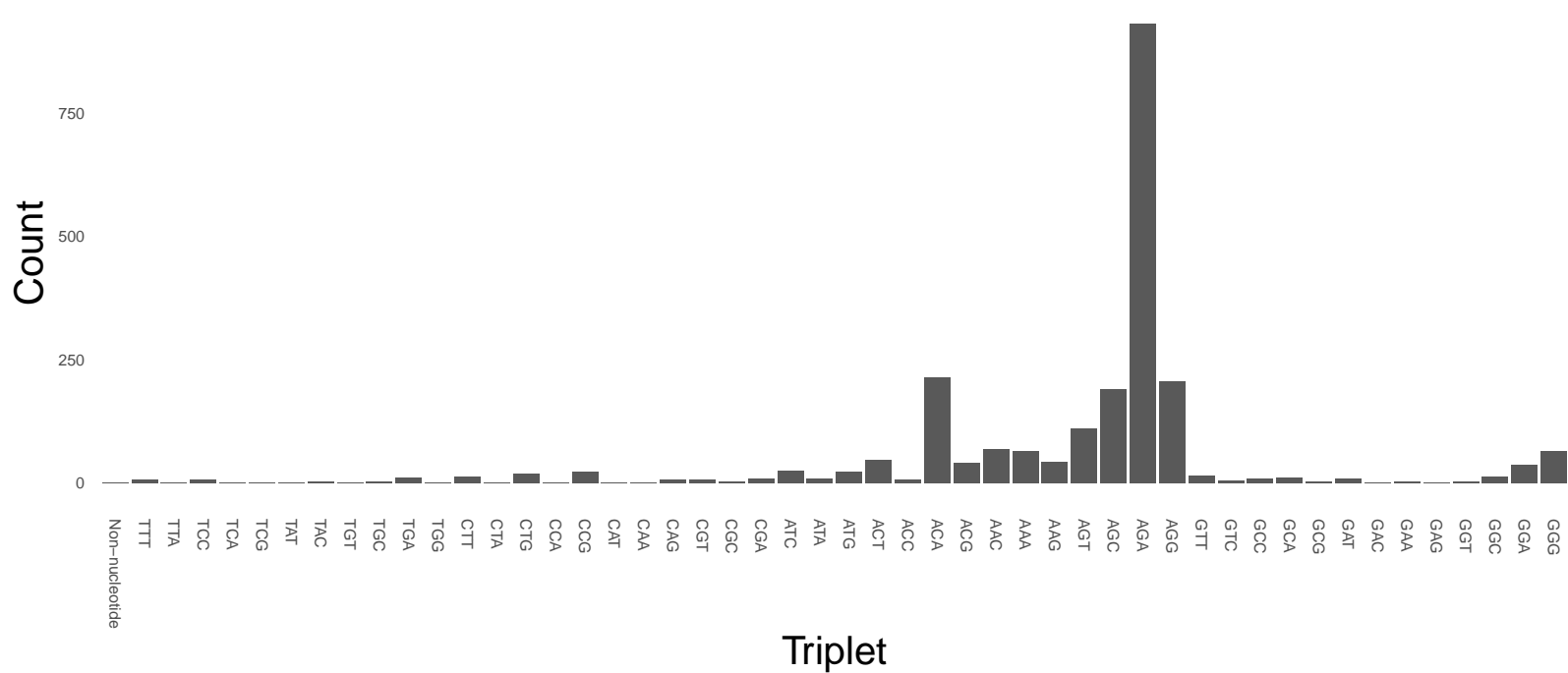
IGHV3-30*01_G174C_A188G_G189A_C264T- Final 3 nucleotides as a triplet



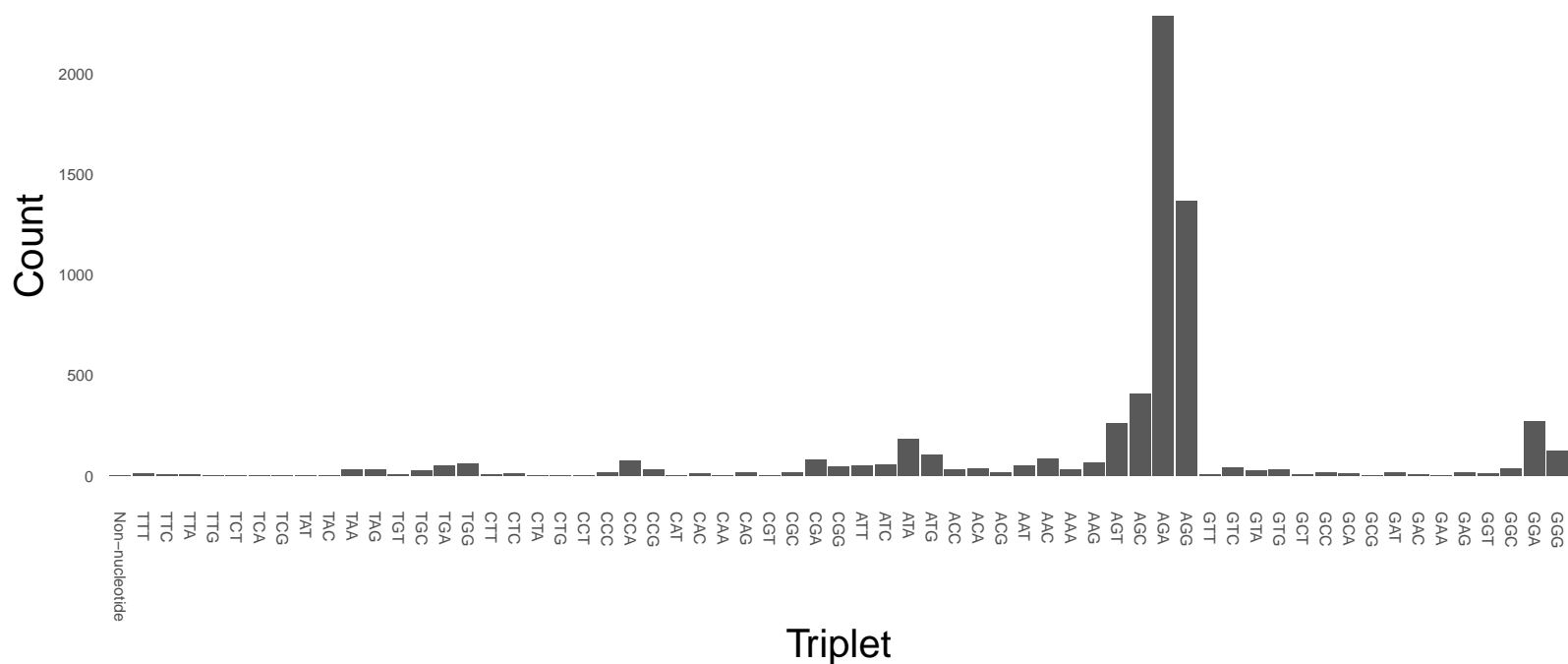
IGHV3-30*02_C141G_C183T- Final 3 nucleotides as a triplet



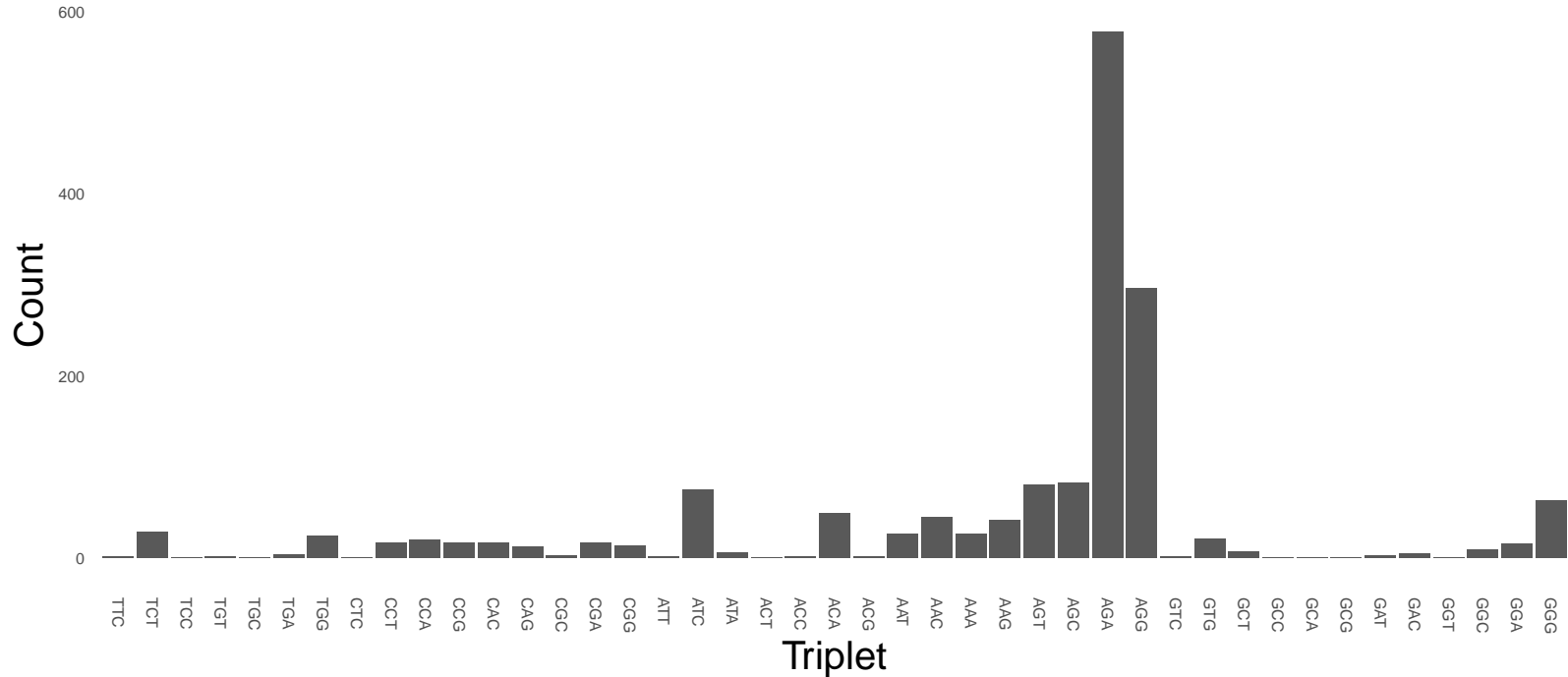
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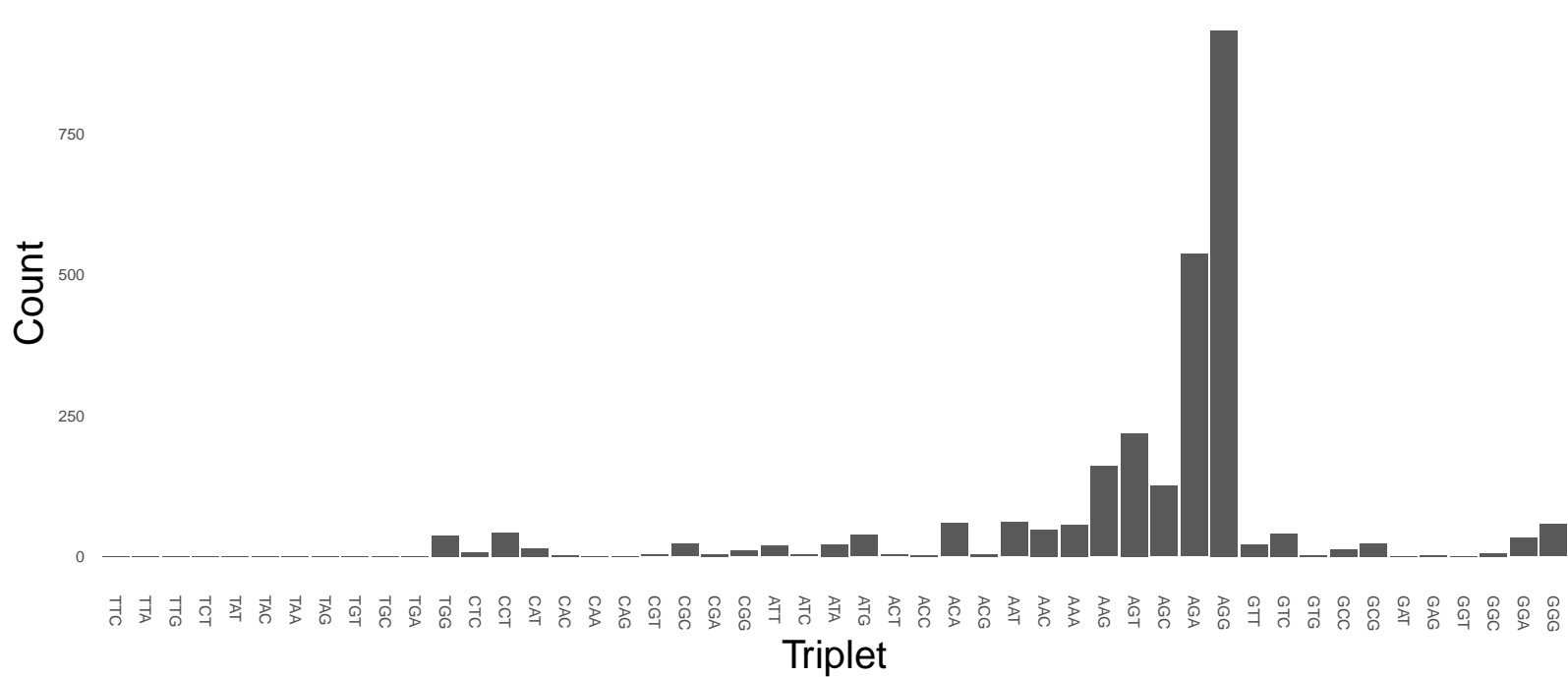
IGHV3-54*02_G170C- Final 3 nucleotides as a triplet



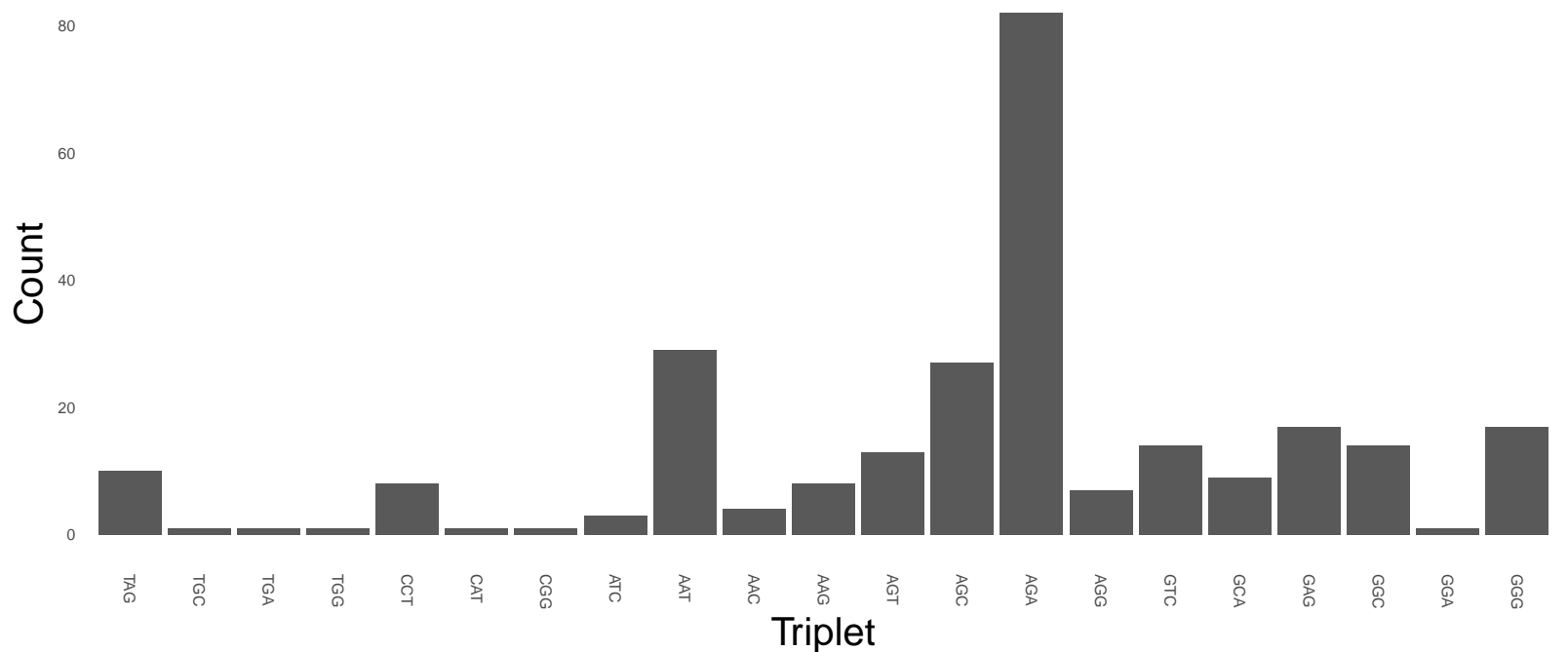
IGHV5-20*02_G259A- Final 3 nucleotides as a triplet



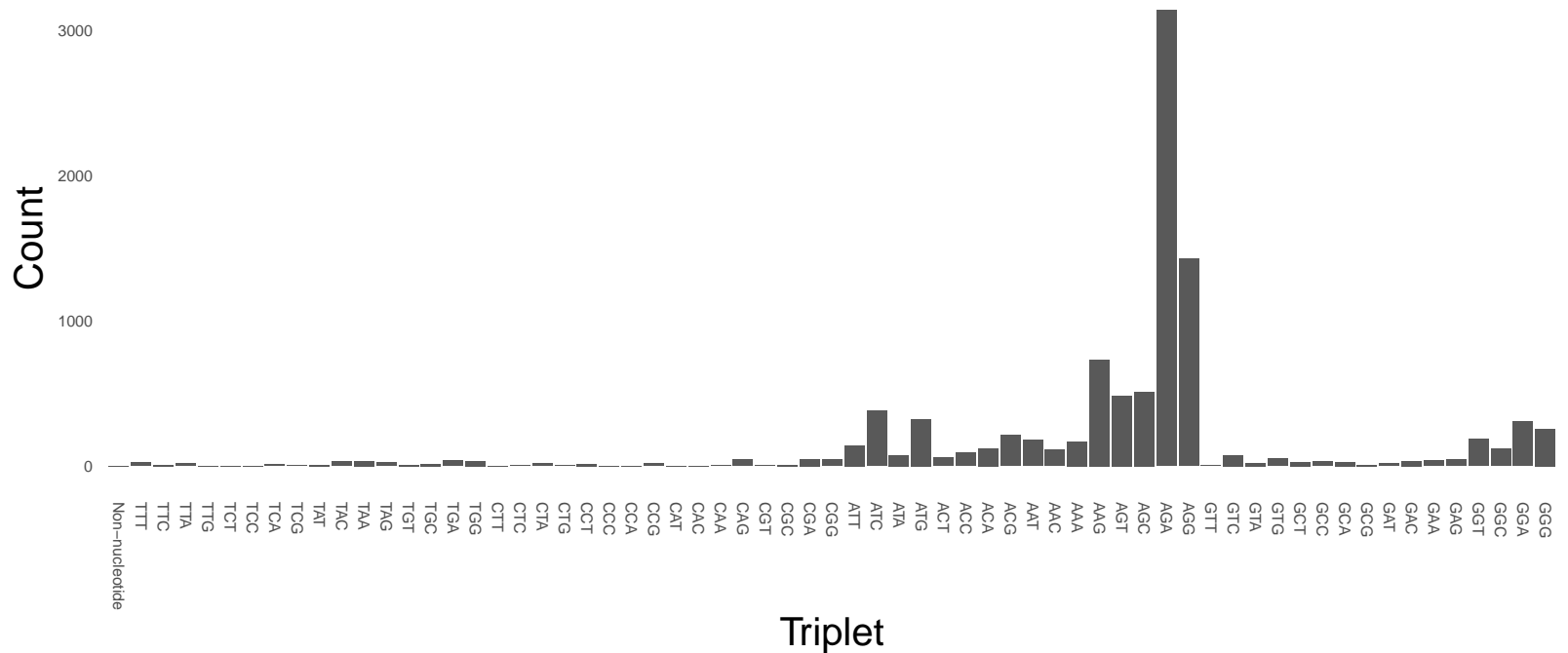
IGHV5-20*02_A141G_C312T- Final 3 nucleotides as a triplet



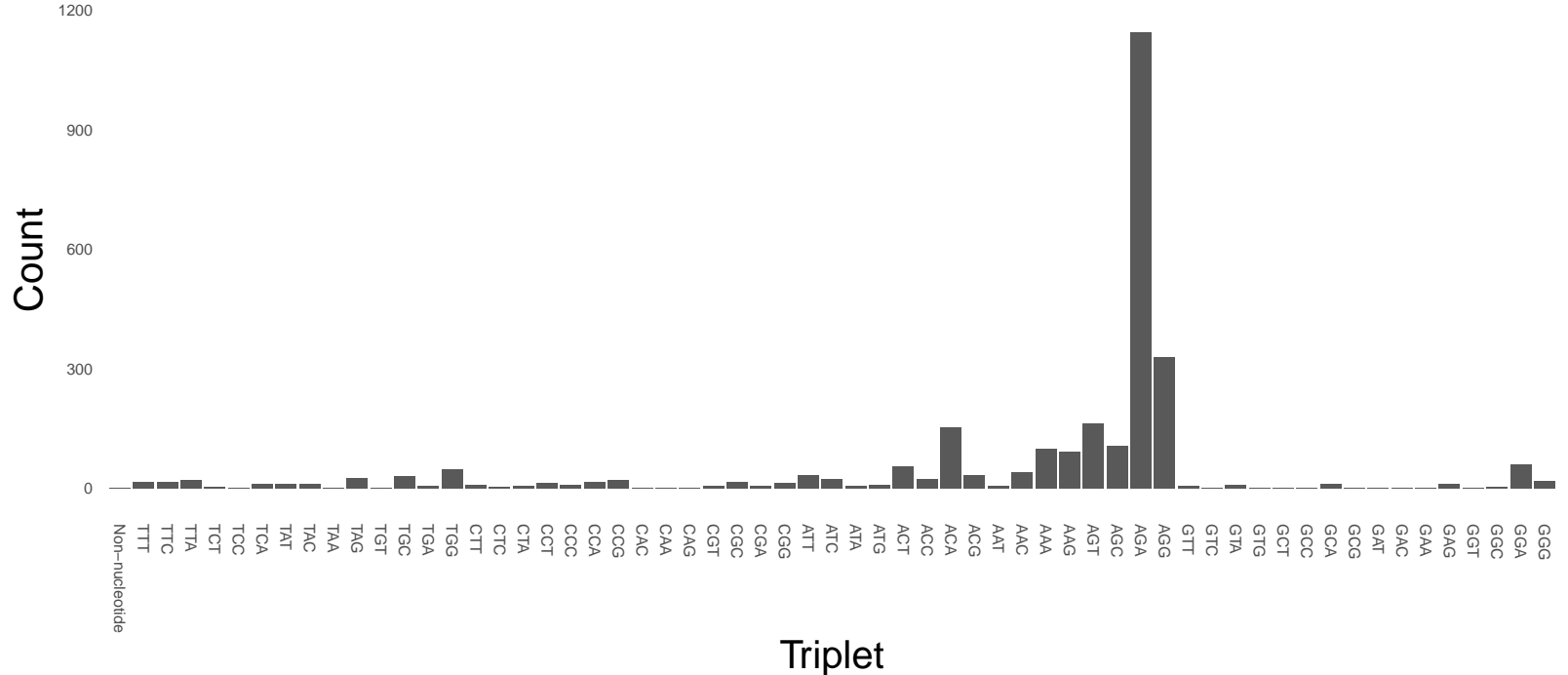
IGHV1-111*02_G240A- Final 3 nucleotides as a triplet



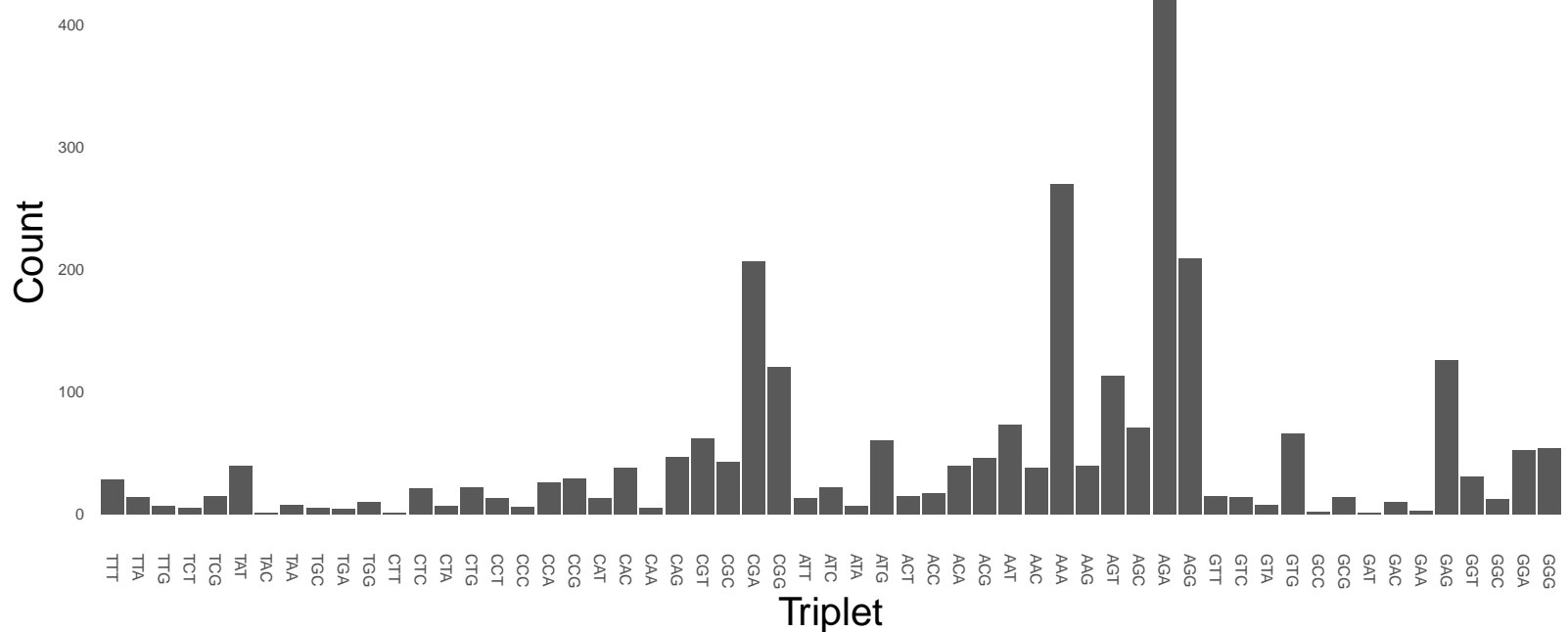
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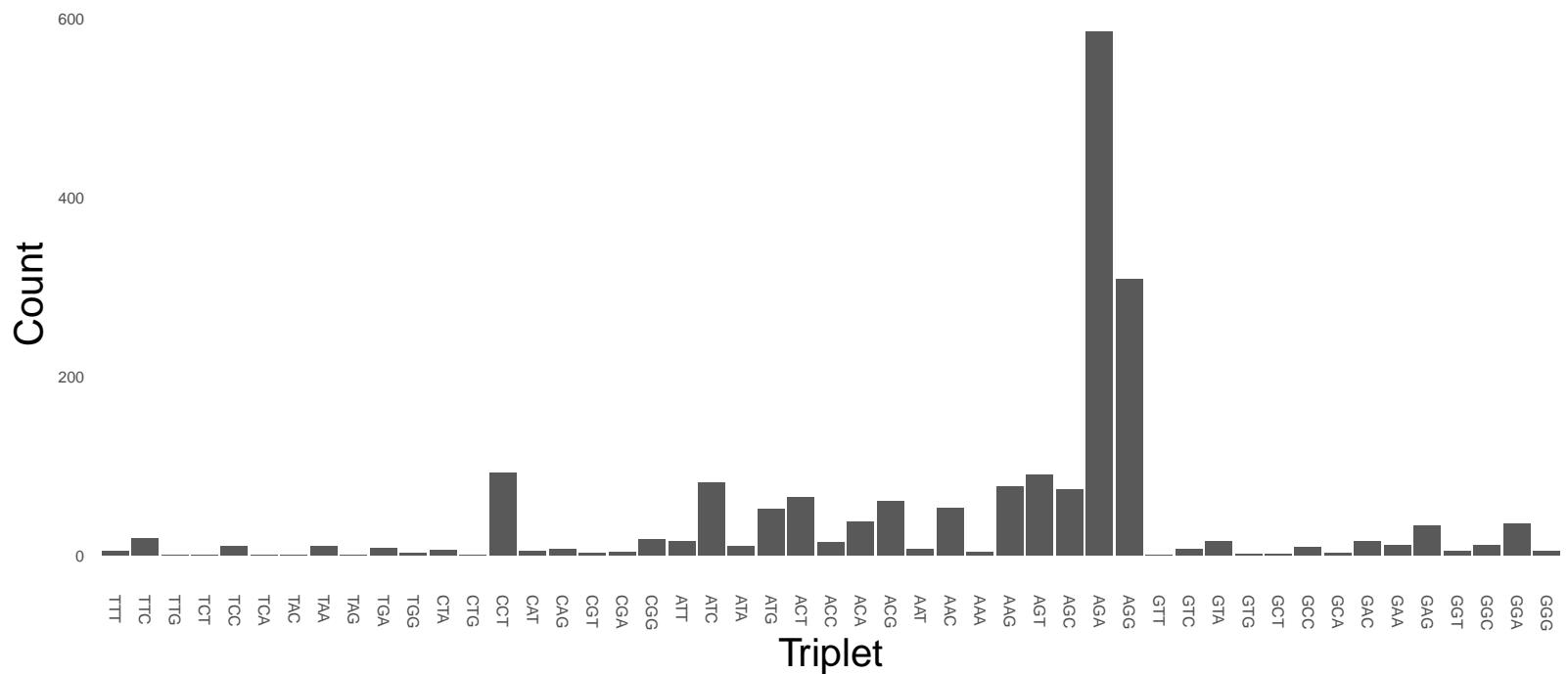
IGHV4-73*01_G147A_G189C- Final 3 nucleotides as a triplet



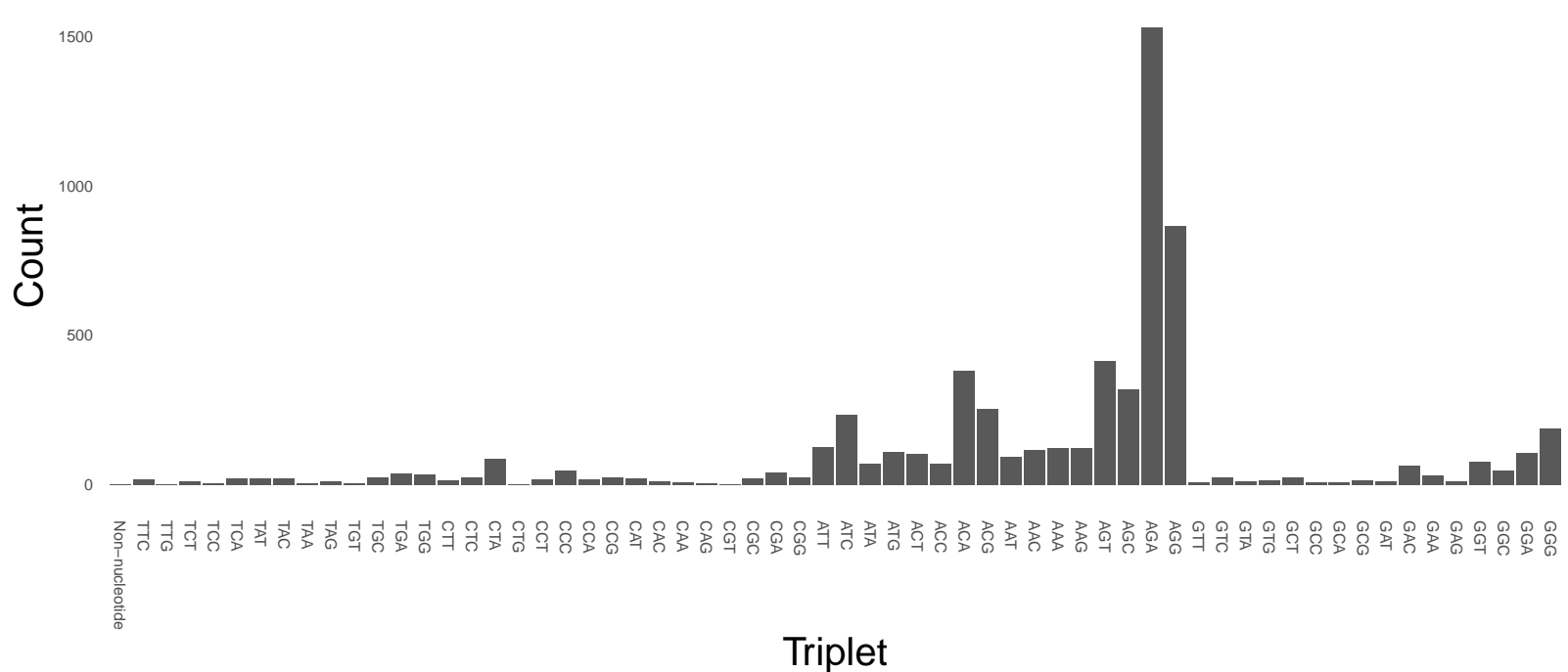
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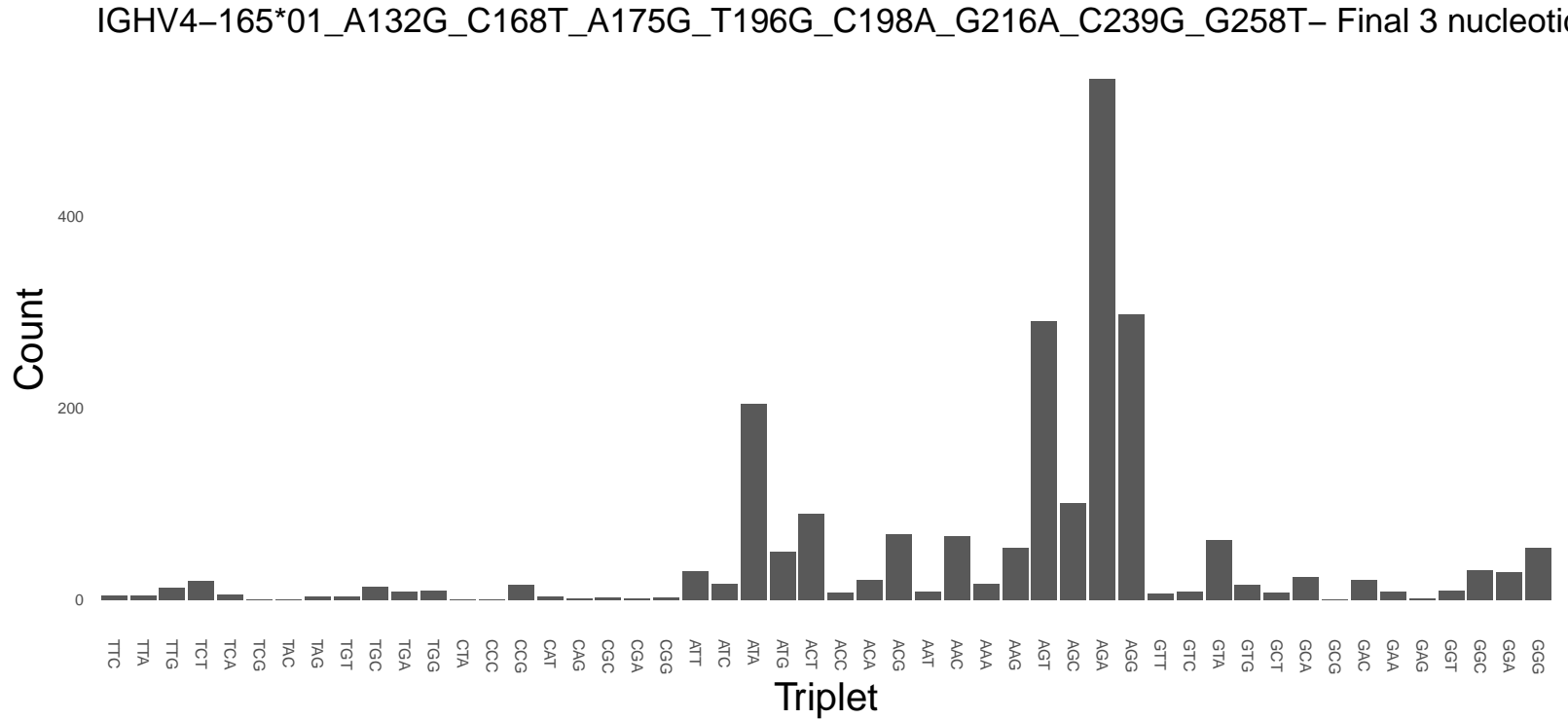
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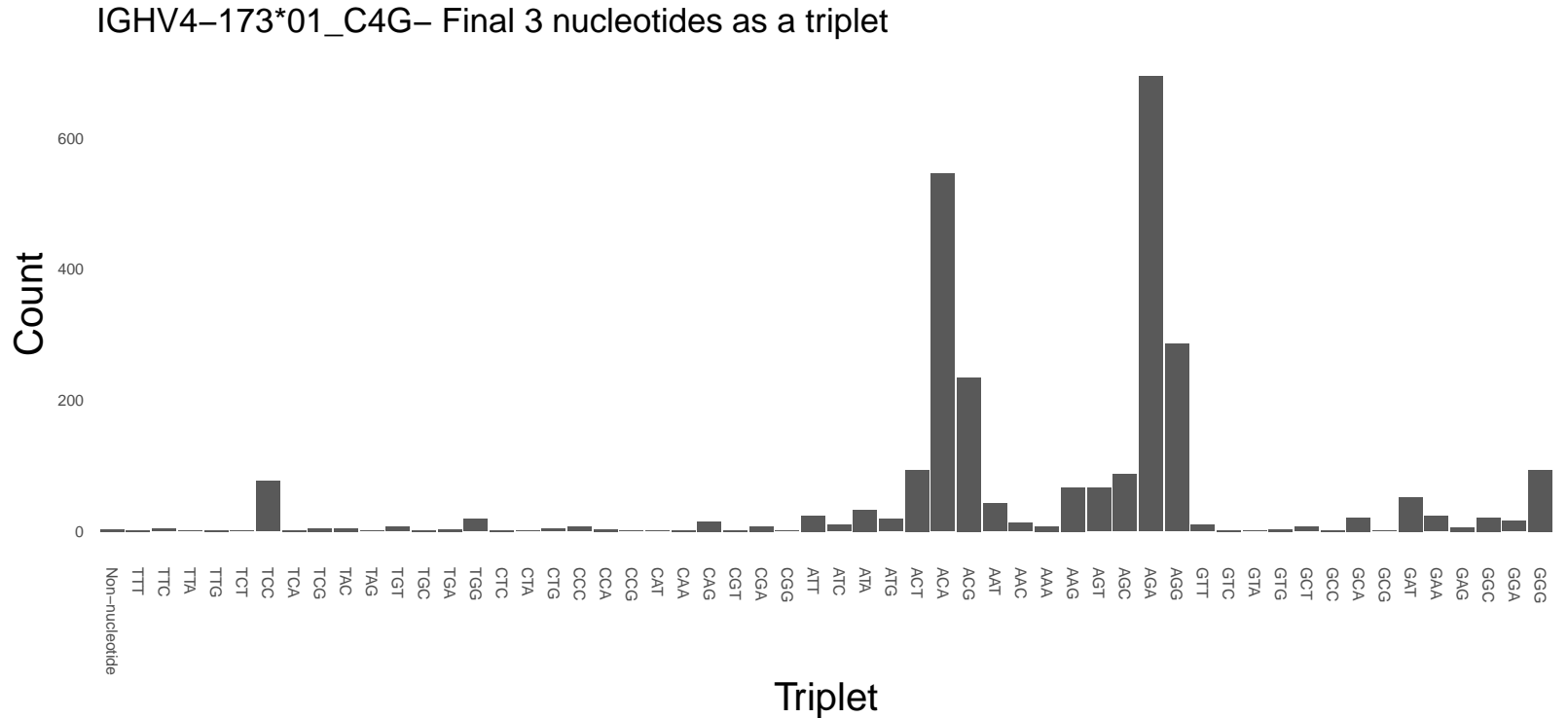
IGHV4-160*01_A162G_C163T_G164A_G184A_G196A- Final 3 nucleotides as a triplet



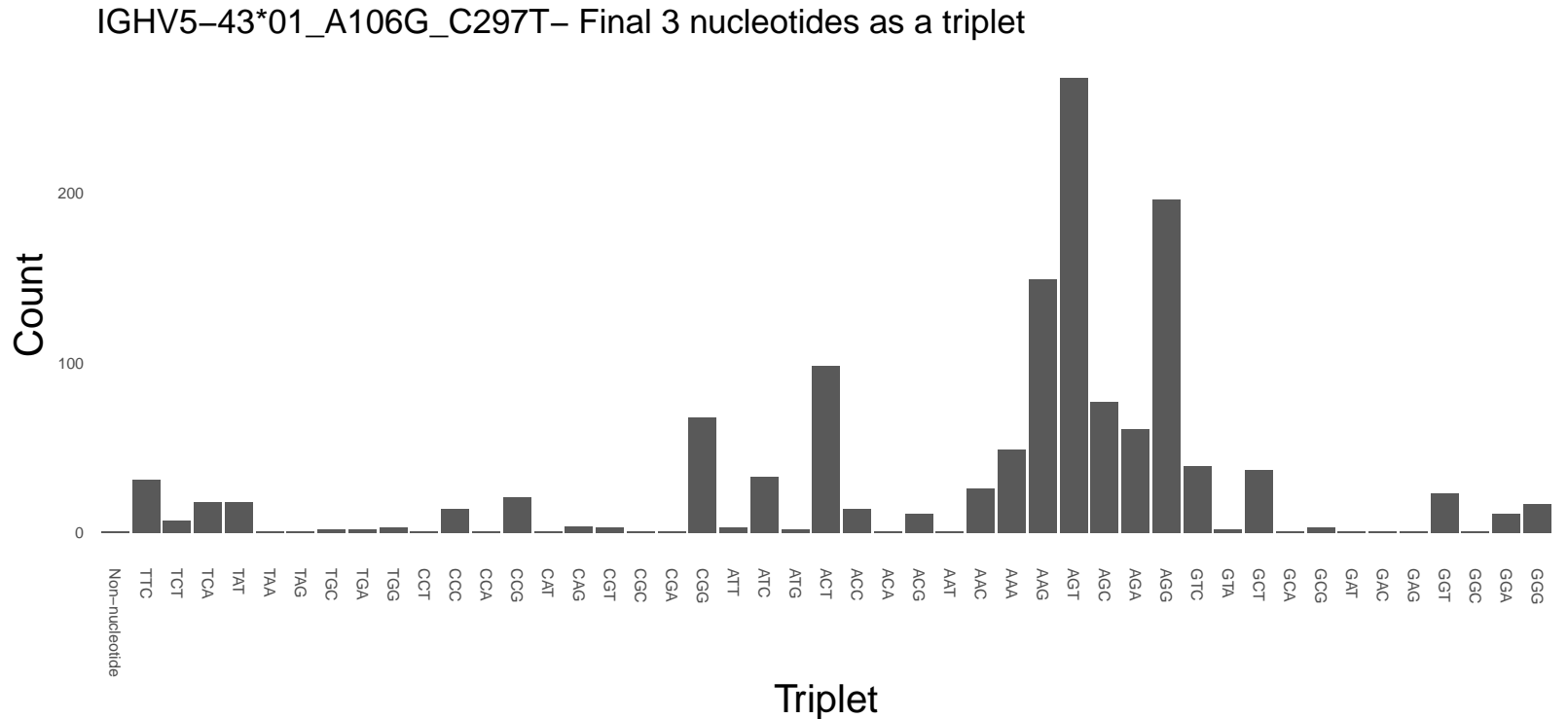
IGHV4–165*01_A132G_C168T_A175G_T196G_C198A_G216A_C239G_G258T– Final 3 nucleotides as a triplet



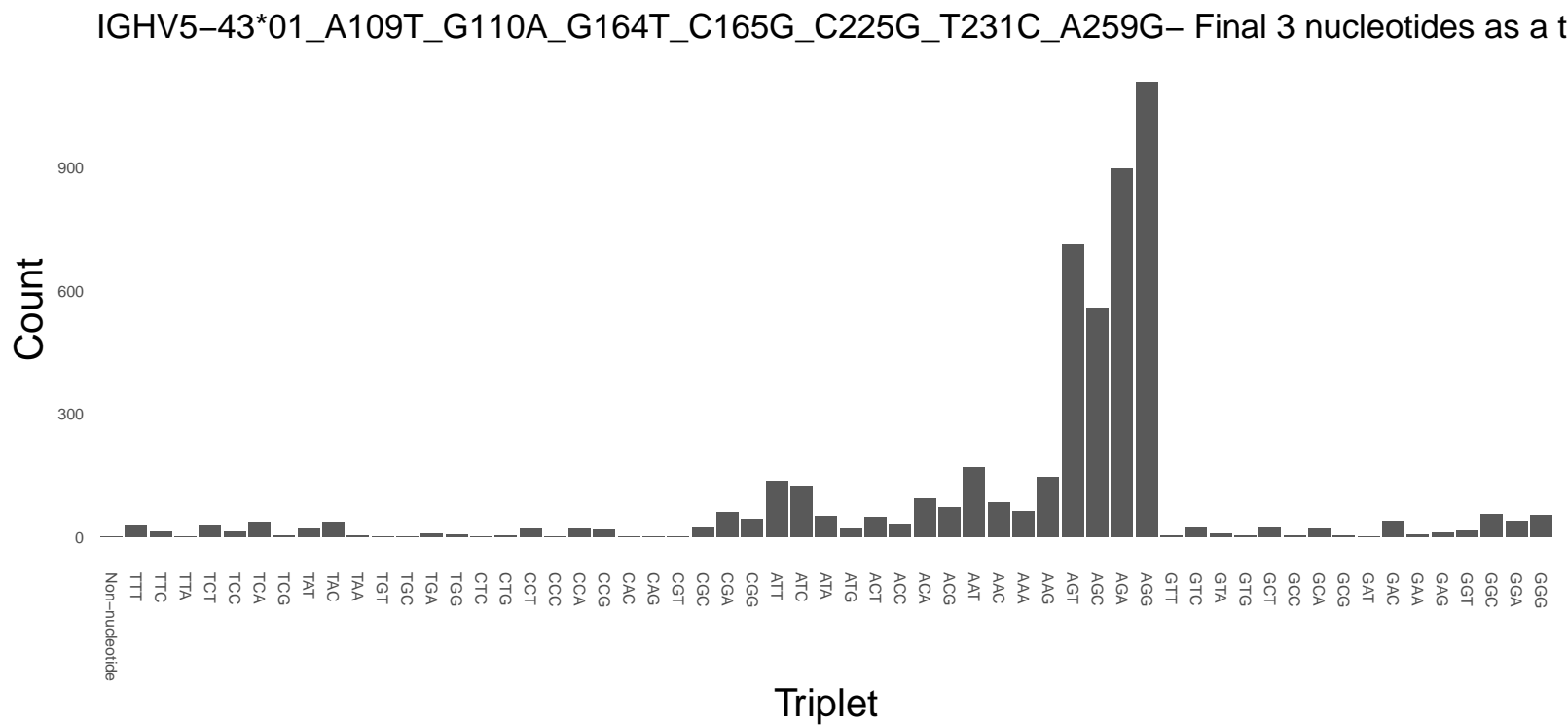
IGHV4–173*01_C4G– Final 3 nucleotides as a triplet



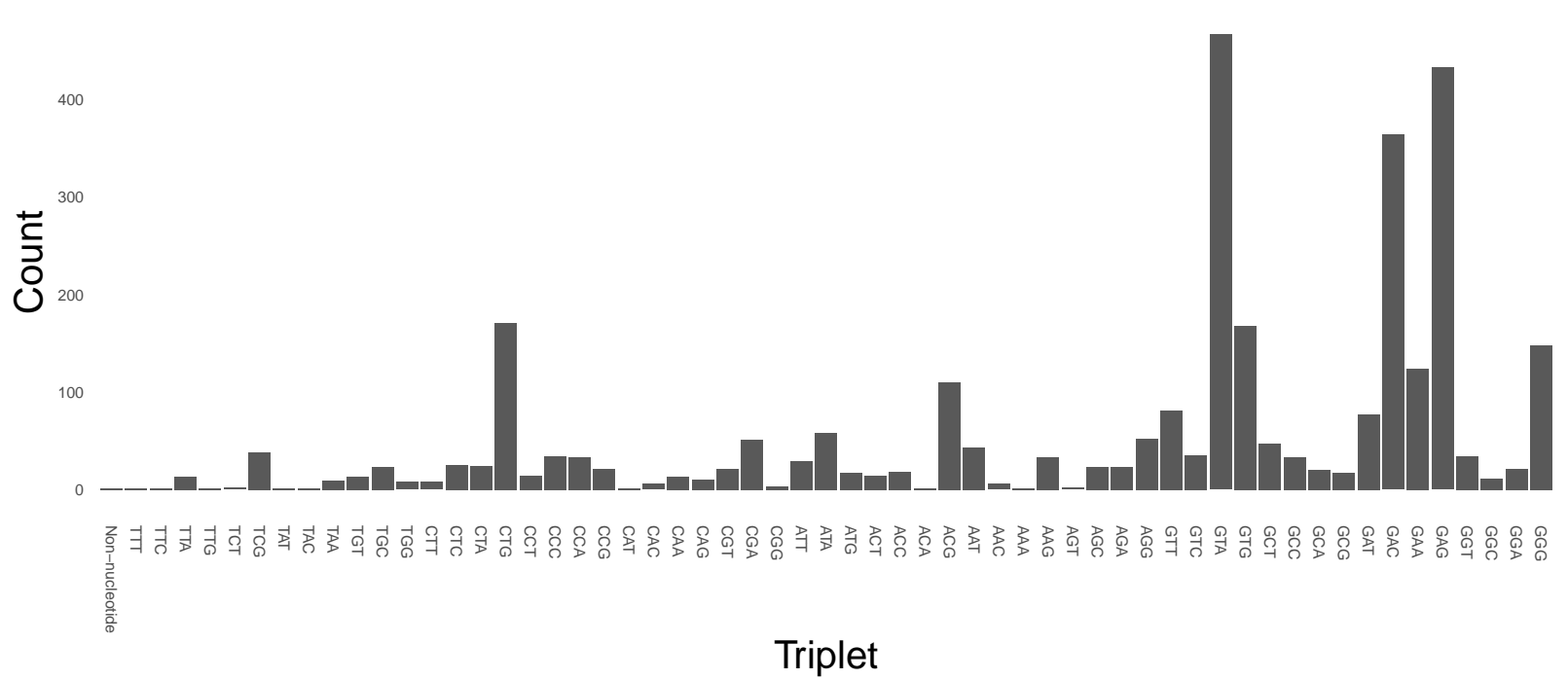
IGHV5–43*01_A106G_C297T– Final 3 nucleotides as a triplet



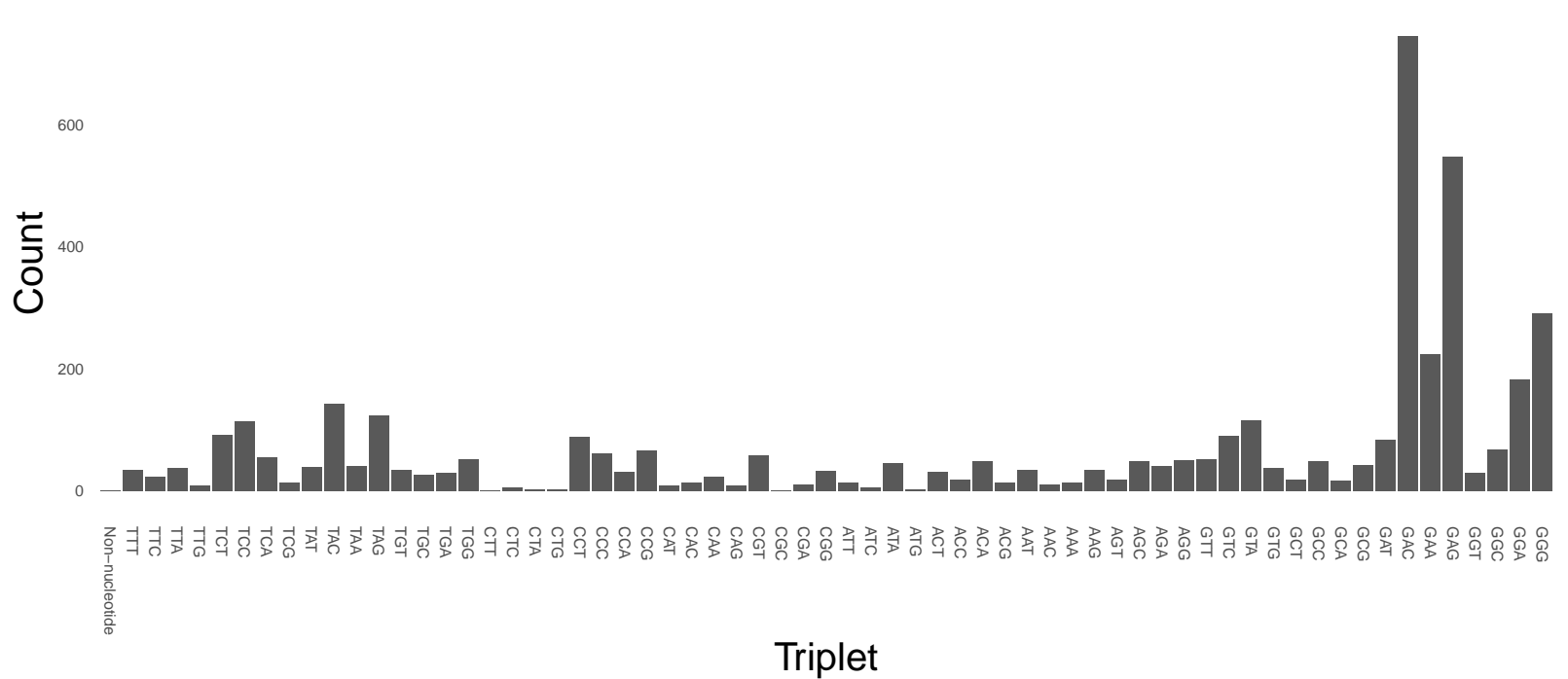
IGHV5-43*01_A109T_G110A_G164T_C165G_C225G_T231C_A259G- Final 3 nucleotides as a triplet



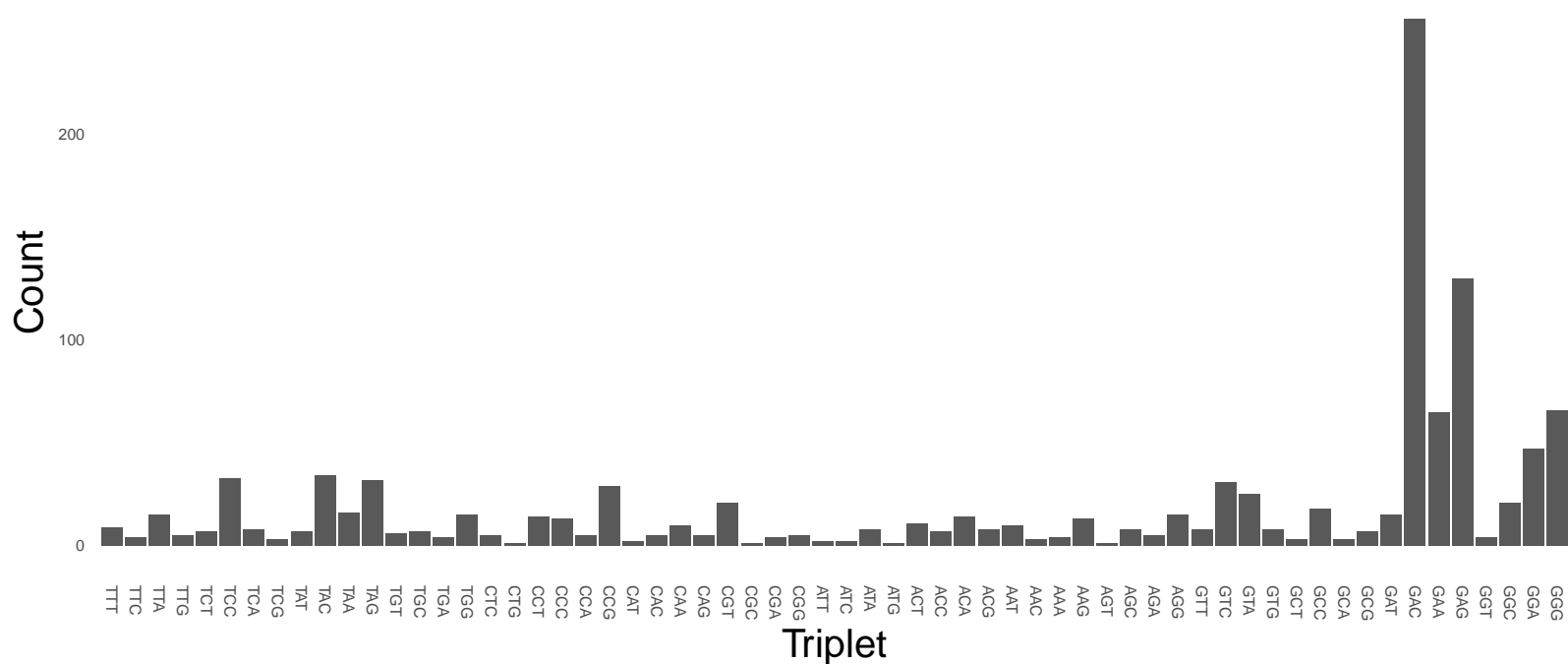
IGHV2-10*01_C6G_A23G_G112C_G118A_A119G_G121T_G141A_C205A_G210T- Final 3 nucleotides as a triplet



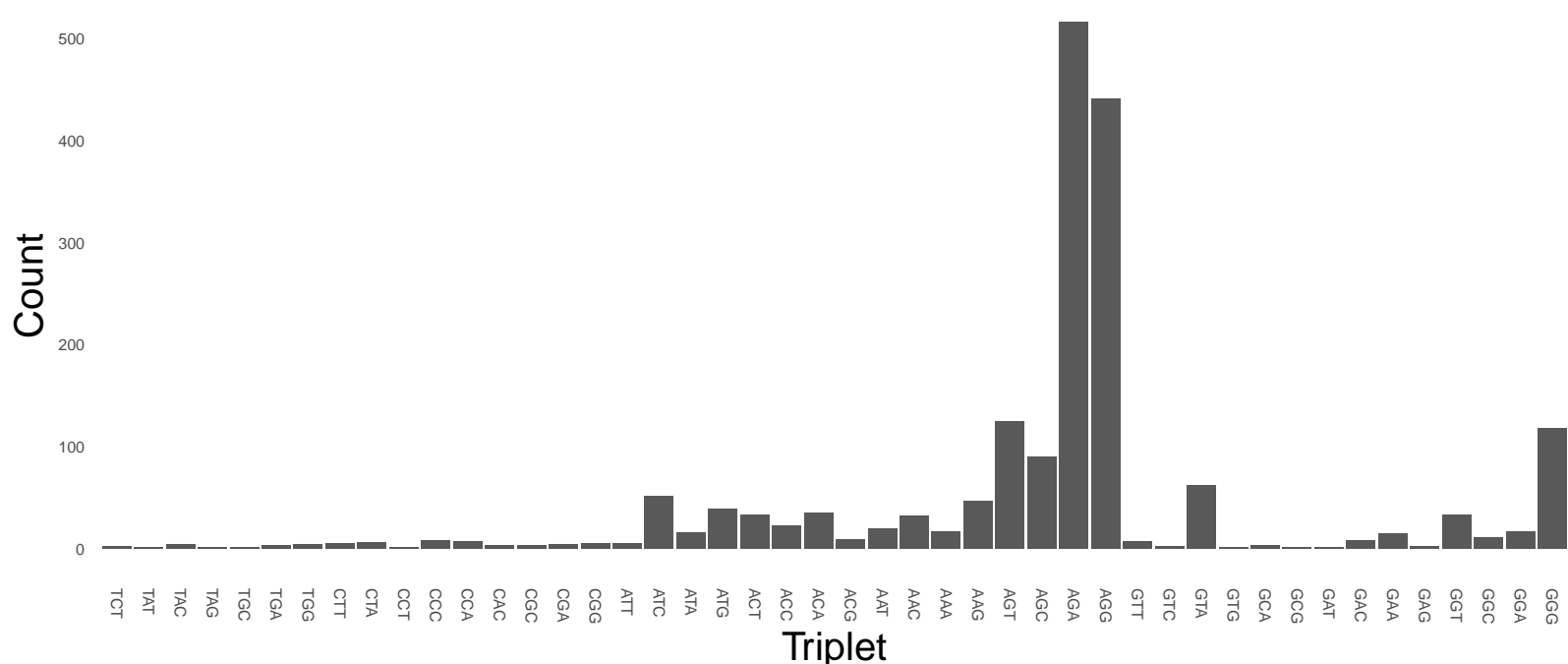
IGHV2S1*01_T210G- Final 3 nucleotides as a triplet



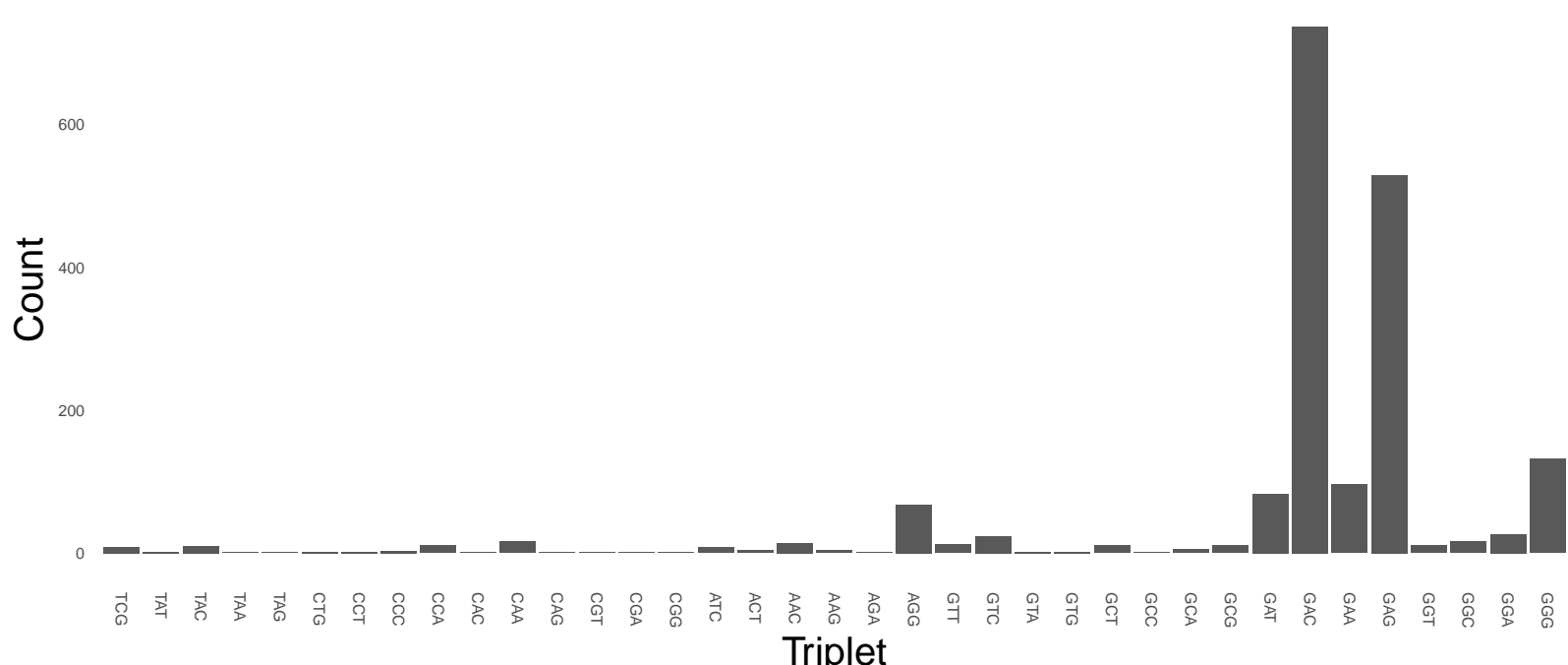
IGHV2S1*01_T210G_G289T– Final 3 nucleotides as a triplet



IGHV4S10*01_A48G_T112C– Final 3 nucleotides as a triplet

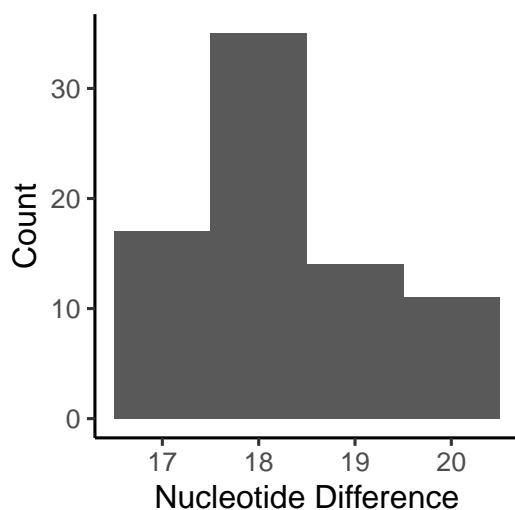


IGHV4-169*01_C4G_T60C_G61C_T163C_A164G_T169G_G172A_T189G_A196T_C259T– Final 3 nucleotides as a triplet



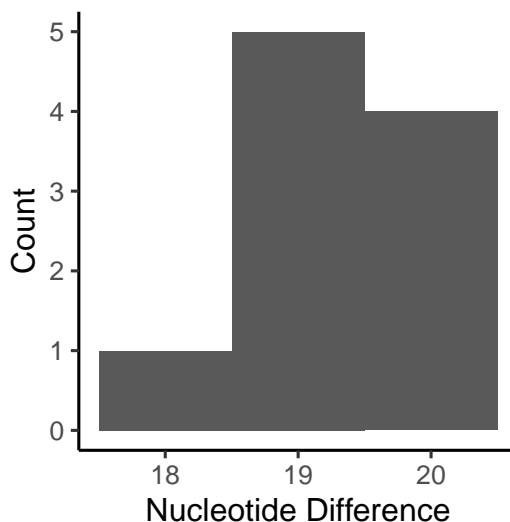
IGHV1S2*01

991 sequences assigned
No exact matches.



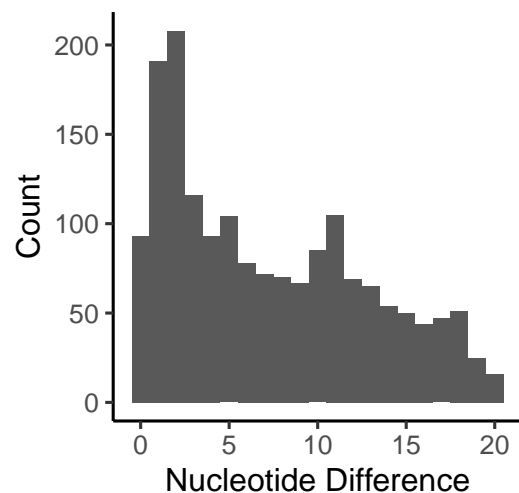
IGHV3S41*01

217 sequences assigned
No exact matches.



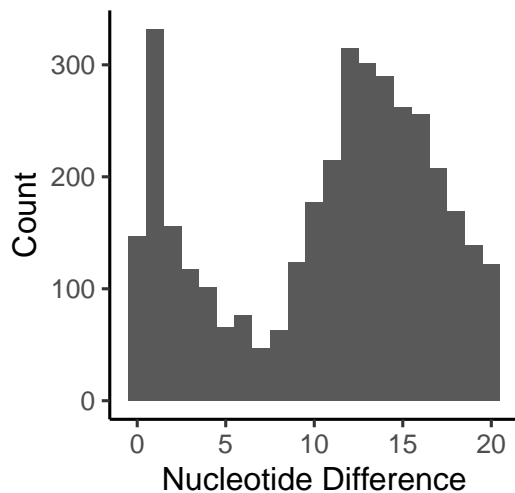
IGHV4S10*01_A48G_T11

1839 sequences assigned
93 (5.1%) exact matches, in which:
86 unique CDR3
4 unique J



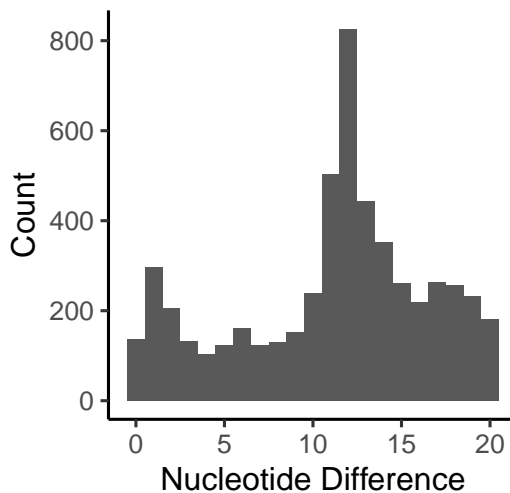
IGHV2S1*01_T210G

4304 sequences assigned
147 (3.4%) exact matches, in which:
120 unique CDR3
5 unique J



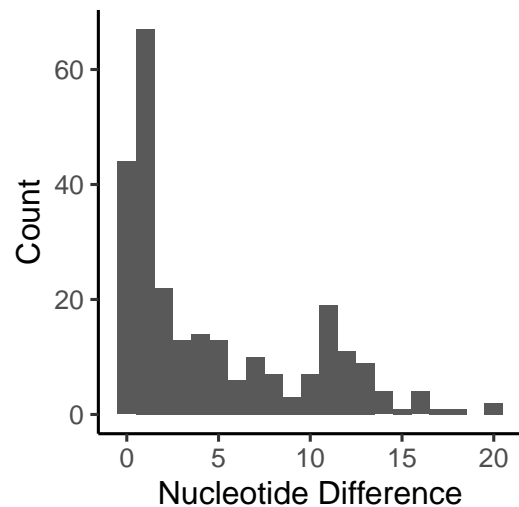
IGHV3S42*01_C38T_A39

8392 sequences assigned
136 (1.6%) exact matches, in which:
104 unique CDR3
4 unique J



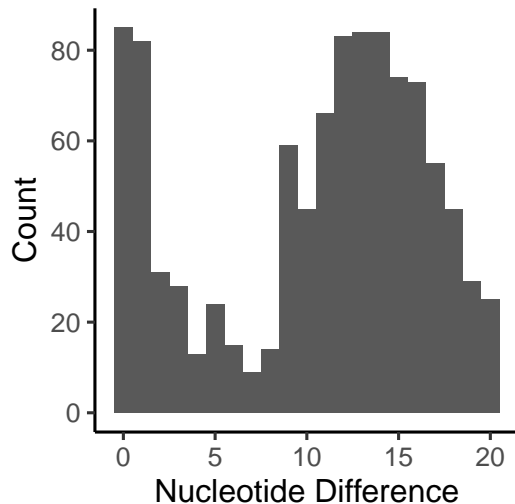
IGHV1-111*02_G240A

268 sequences assigned
44 (16.4%) exact matches, in which:
33 unique CDR3
4 unique J



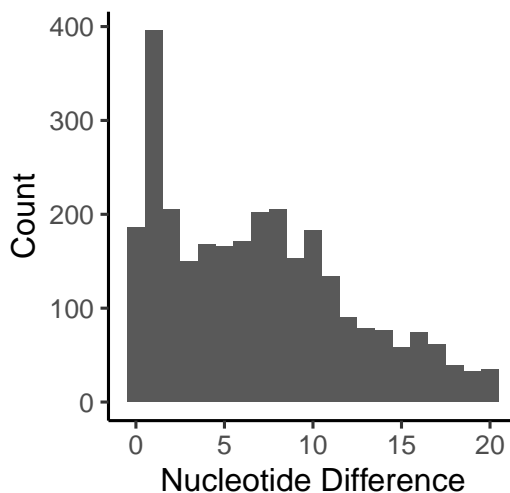
IGHV2S1*01_T210G_G28

1144 sequences assigned
85 (7.4%) exact matches, in which:
76 unique CDR3
5 unique J



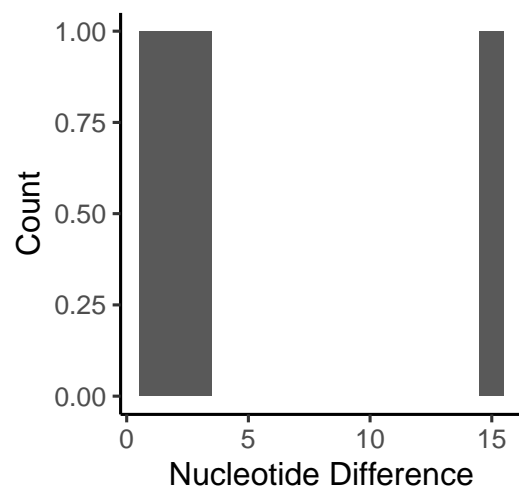
IGHV3S42*01_T19A_G24

3575 sequences assigned
186 (5.2%) exact matches, in which:
150 unique CDR3
5 unique J



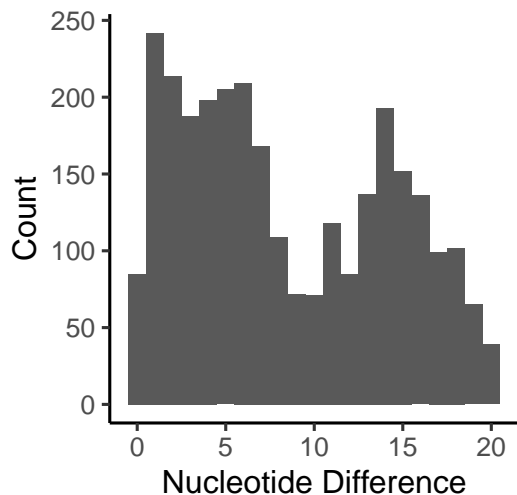
IGHV1-156*01

44 sequences assigned
No exact matches.



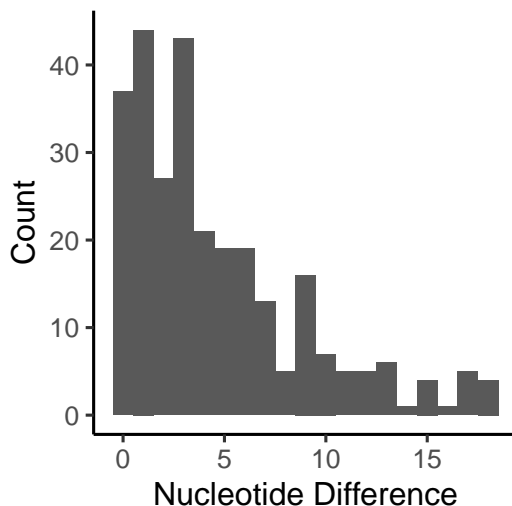
IGHV2-10*01_C6G_A23C

3057 sequences assigned
85 (2.8%) exact matches, in which:
72 unique CDR3
4 unique J



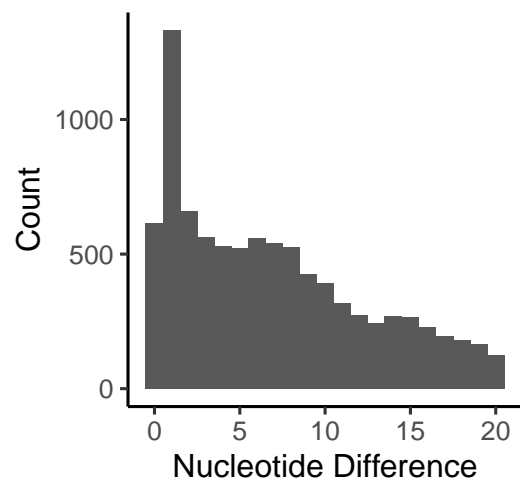
IGHV3-37*01_C54T_C114

2270 sequences assigned
37 (1.6%) exact matches, in which:
32 unique CDR3
3 unique J



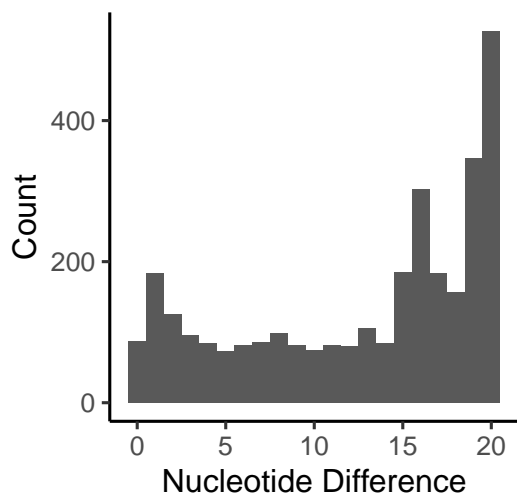
IGHV3-103*01_T19A_G

9926 sequences assigned
614 (6.2%) exact matches, in which:
487 unique CDR3
4 unique J



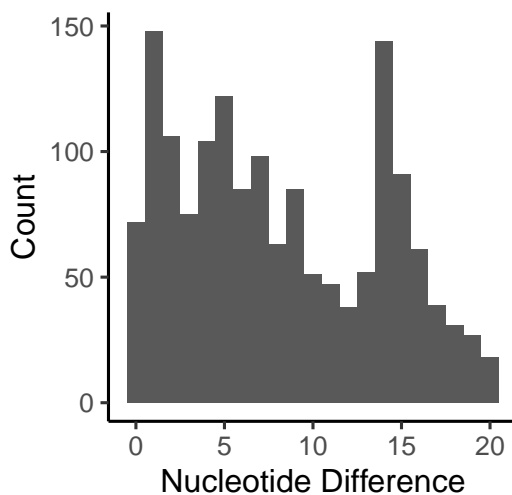
IGHV3-30*01_G174C_A'

5479 sequences assigned
87 (1.6%) exact matches, in which:
63 unique CDR3
5 unique J



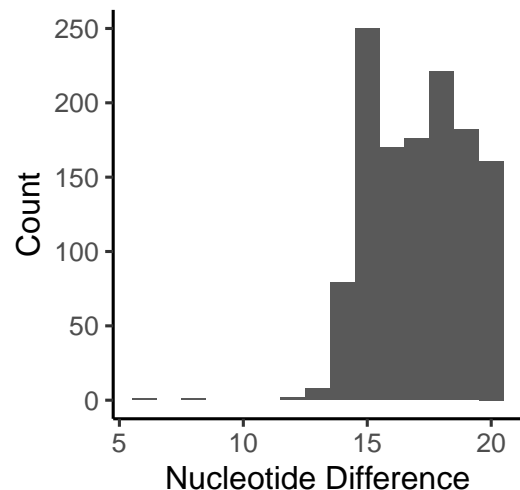
IGHV3-38*01_G106A_C'

2430 sequences assigned
72 (3%) exact matches, in which:
57 unique CDR3
4 unique J



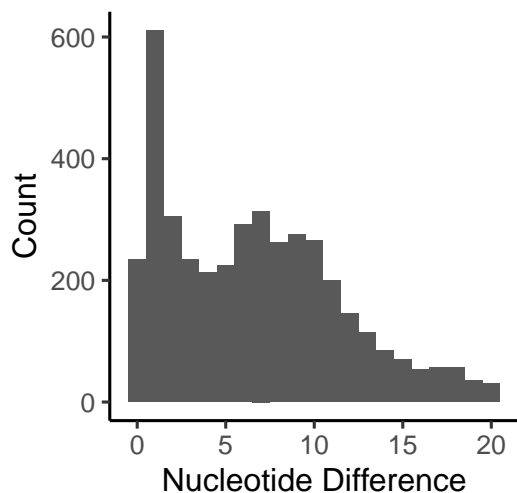
IGHV3-108*01

3468 sequences assigned
No exact matches.



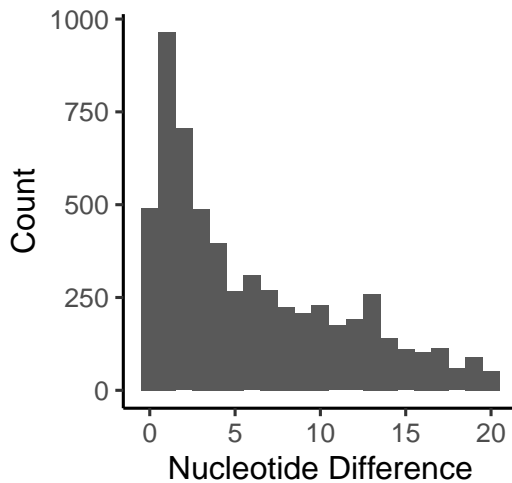
IGHV3-30*02_C141G_C'

4316 sequences assigned
234 (5.4%) exact matches, in which:
168 unique CDR3
3 unique J



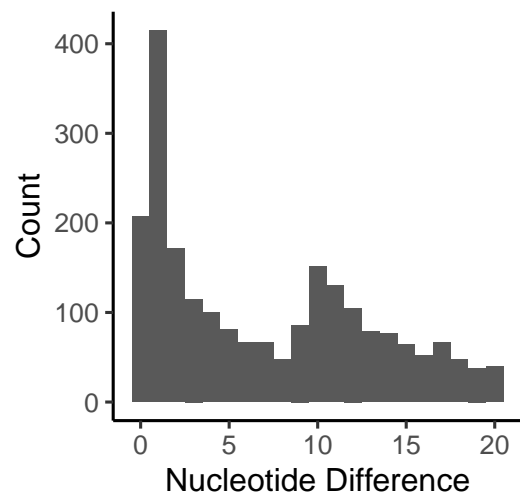
IGHV3-54*02_G170C

6257 sequences assigned
491 (7.8%) exact matches, in which:
373 unique CDR3
4 unique J



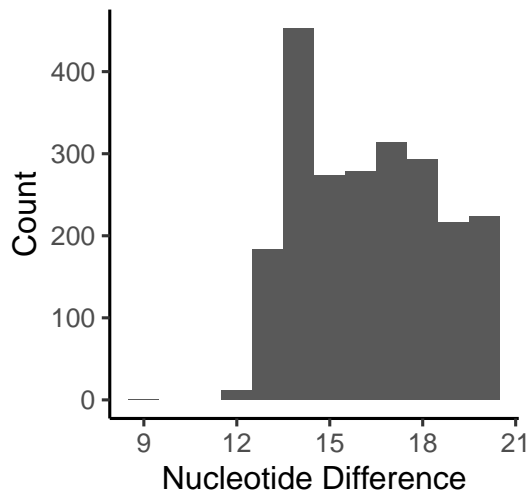
IGHV3-134*01_A3G_G8

3133 sequences assigned
207 (6.6%) exact matches, in which:
171 unique CDR3
4 unique J



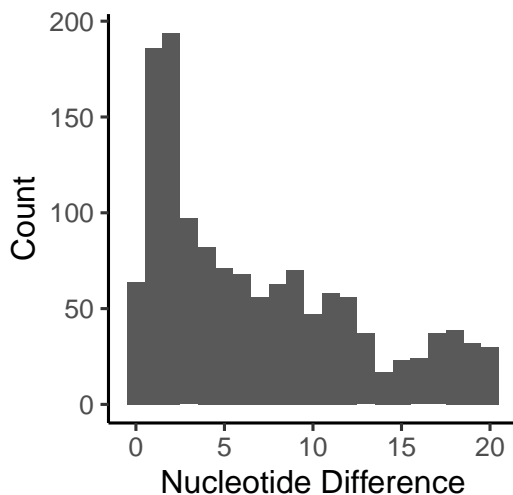
IGHV3-137*01

5215 sequences assigned
No exact matches.



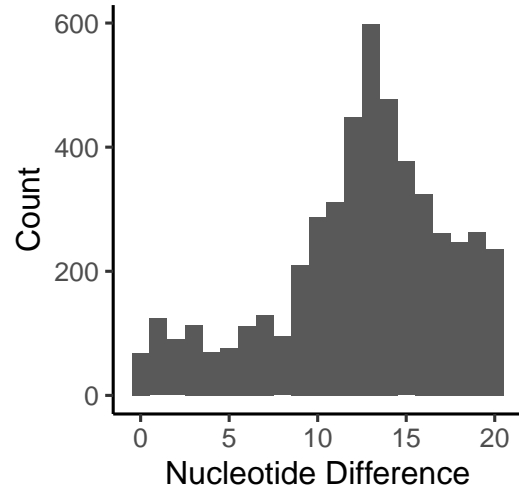
IGHV4-80*01_G70A_C90

1665 sequences assigned
64 (3.8%) exact matches, in which:
50 unique CDR3
4 unique J



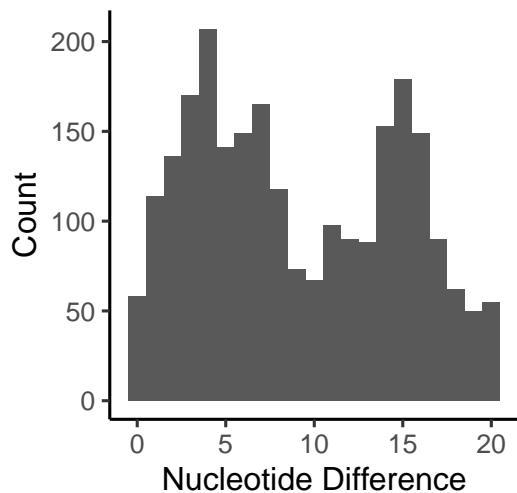
IGHV4-160*01_A162G_C

6162 sequences assigned
68 (1.1%) exact matches, in which:
62 unique CDR3
4 unique J



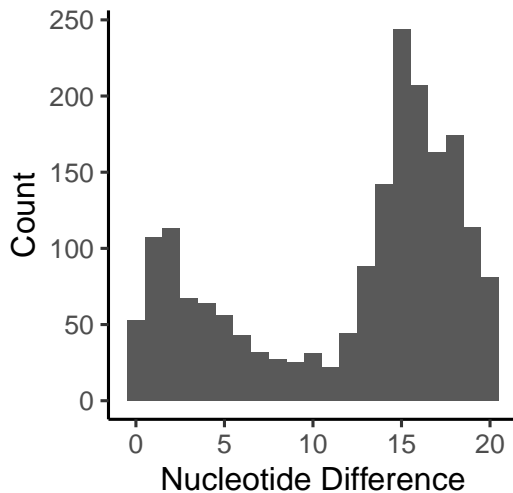
IGHV4-73*01_G147A_G1

2777 sequences assigned
58 (2.1%) exact matches, in which:
53 unique CDR3
4 unique J



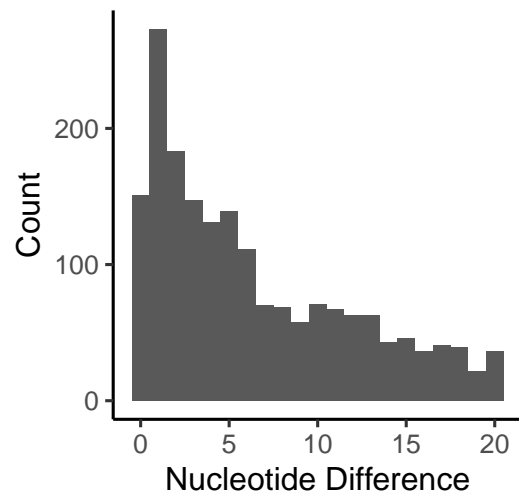
IGHV4-122*02_C87T_G1

2667 sequences assigned
53 (2%) exact matches, in which:
49 unique CDR3
4 unique J



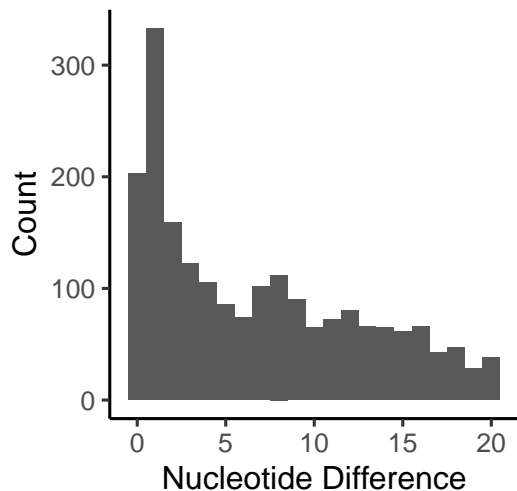
IGHV4-165*01_A132G_C

2274 sequences assigned
151 (6.6%) exact matches, in which:
131 unique CDR3
4 unique J



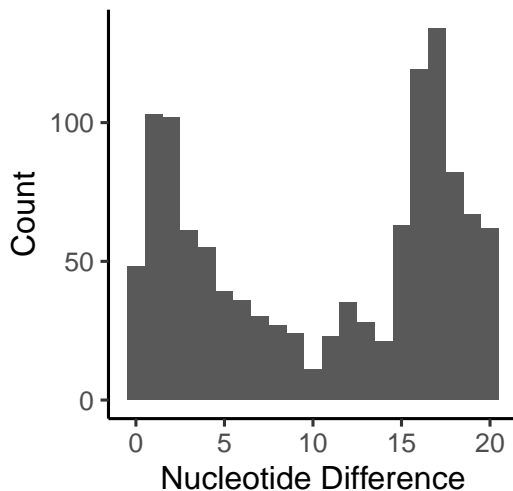
IGHV4-80*01_C60T_C61

2328 sequences assigned
203 (8.7%) exact matches, in which:
180 unique CDR3
5 unique J



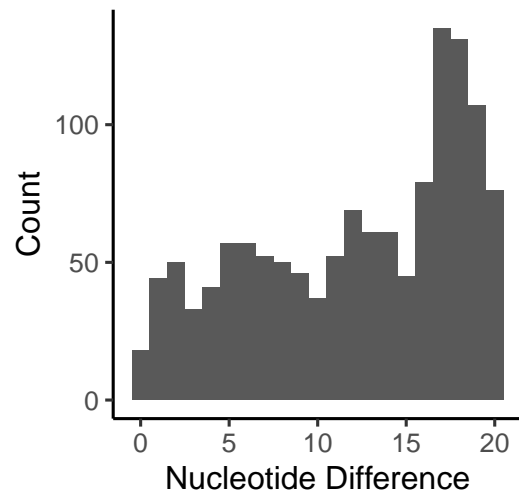
IGHV4-127*01_C34G_T6

1890 sequences assigned
48 (2.5%) exact matches, in which:
44 unique CDR3
5 unique J



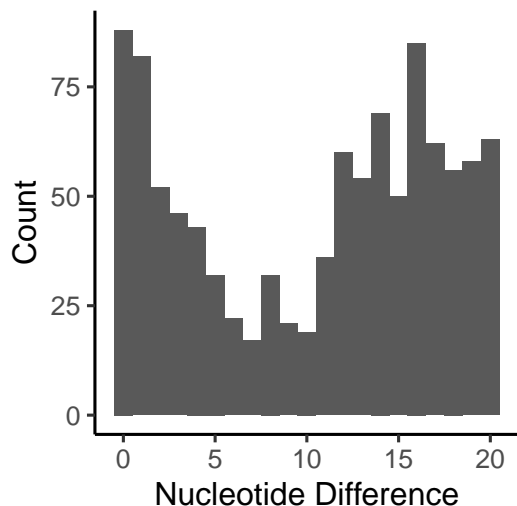
IGHV4-169*01_C4G_T60

1860 sequences assigned
18 (1%) exact matches, in which:
17 unique CDR3
3 unique J



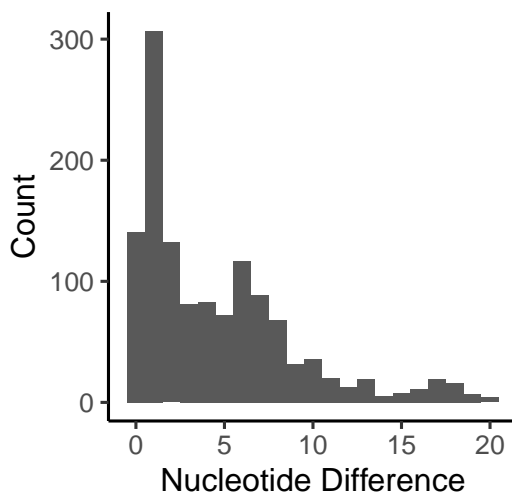
IGHV4-173*01_C4G

2665 sequences assigned
88 (3.3%) exact matches, in which:
85 unique CDR3
4 unique J



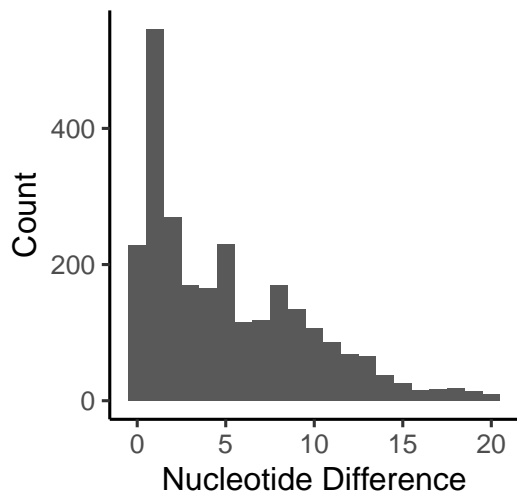
IGHV5-43*01_A106G_C297T

1325 sequences assigned
141 (10.6%) exact matches, in which:
106 unique CDR3
5 unique J



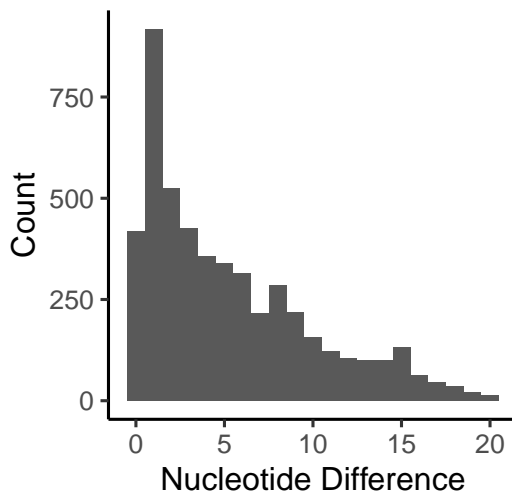
IGHV5-20*02_A141G_C165G_T232G

2643 sequences assigned
229 (8.7%) exact matches, in which:
168 unique CDR3
4 unique J



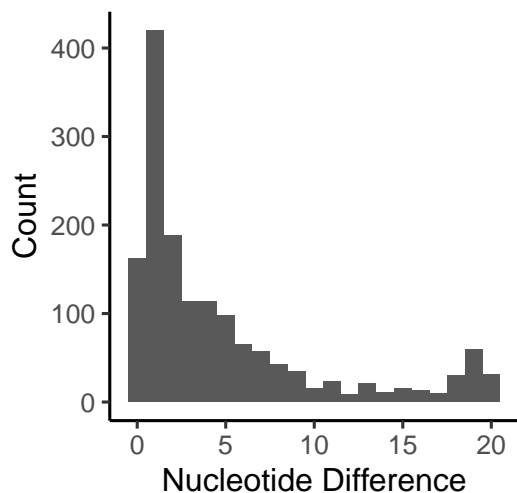
IGHV5-43*01_A109T_G110A_G164T_C165G_C225G_T232G

5031 sequences assigned
418 (8.3%) exact matches, in which:
319 unique CDR3
3 unique J



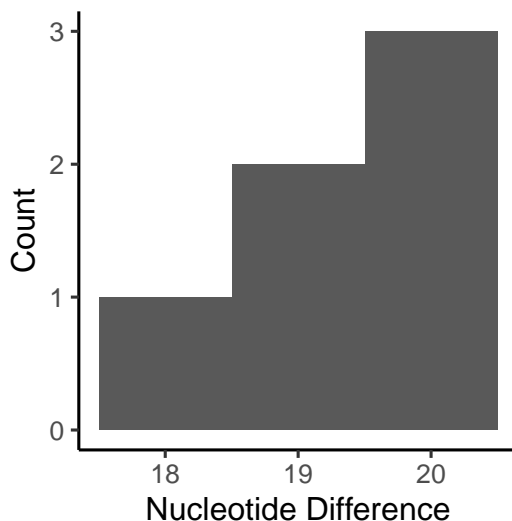
IGHV5-20*02_G259A

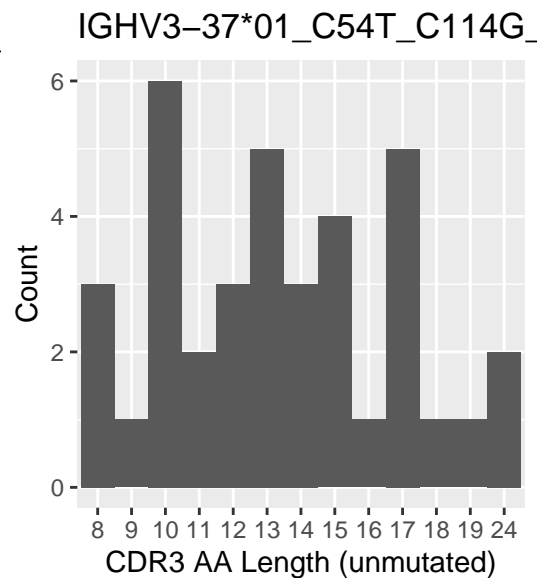
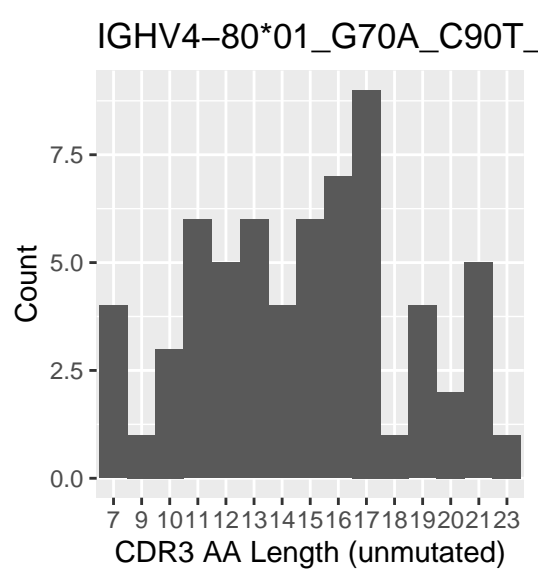
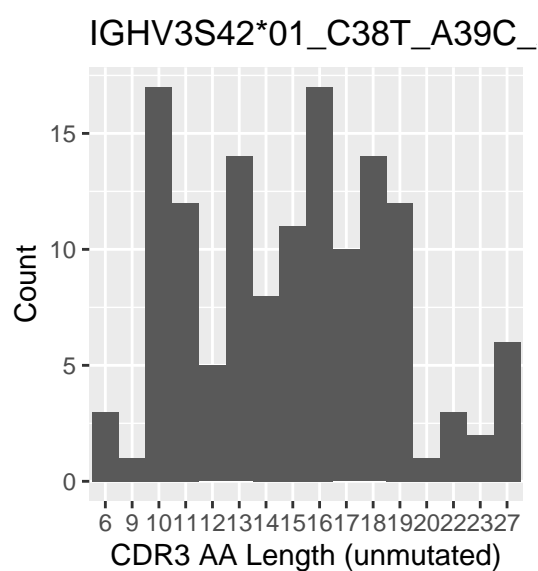
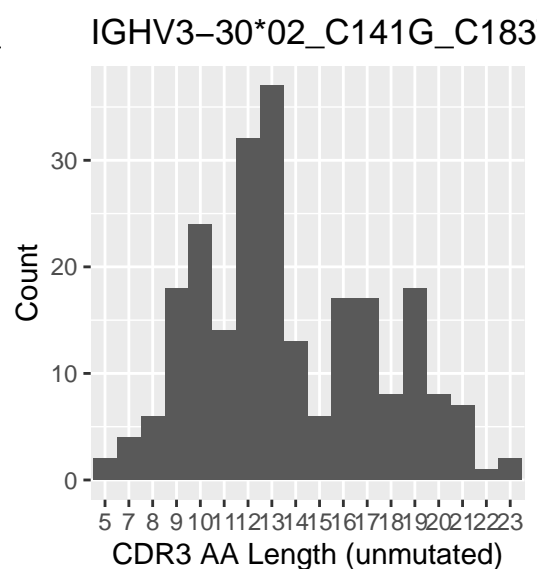
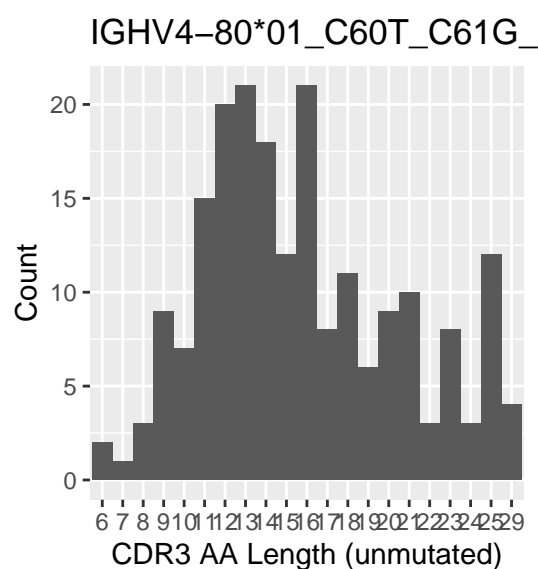
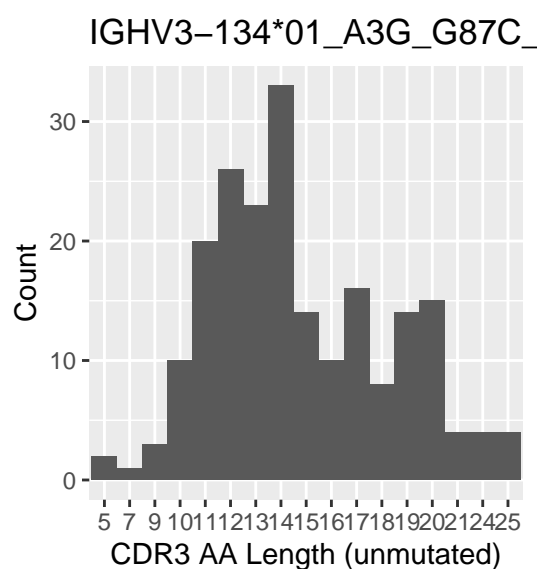
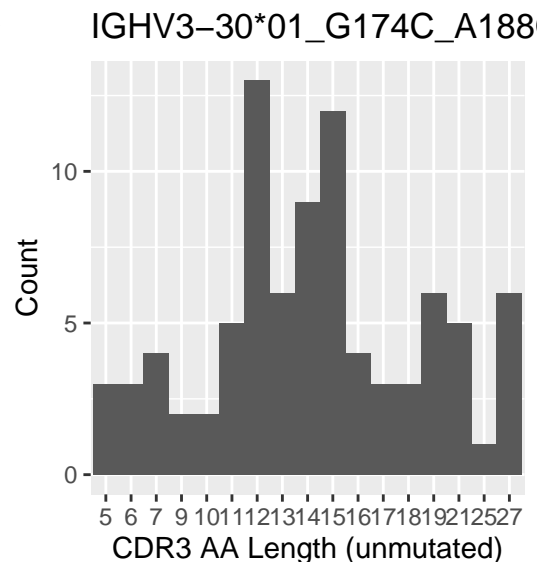
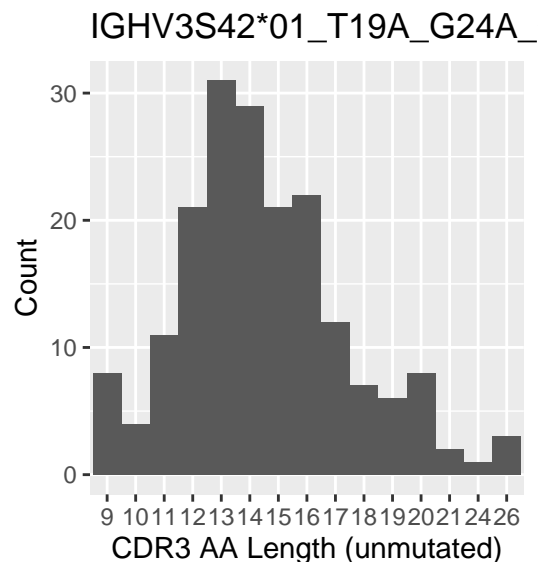
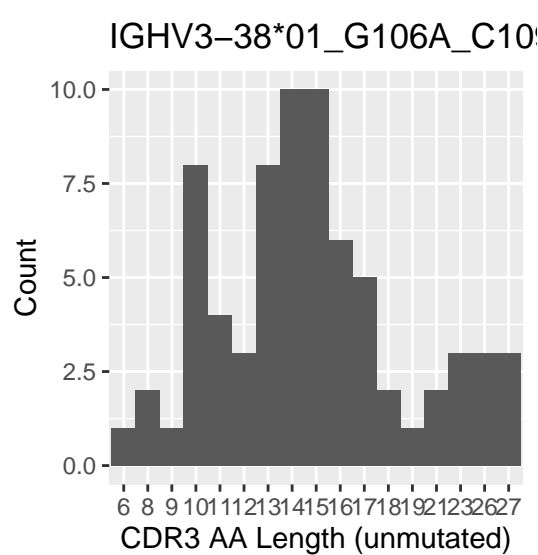
1624 sequences assigned
162 (10%) exact matches, in which:
124 unique CDR3
4 unique J



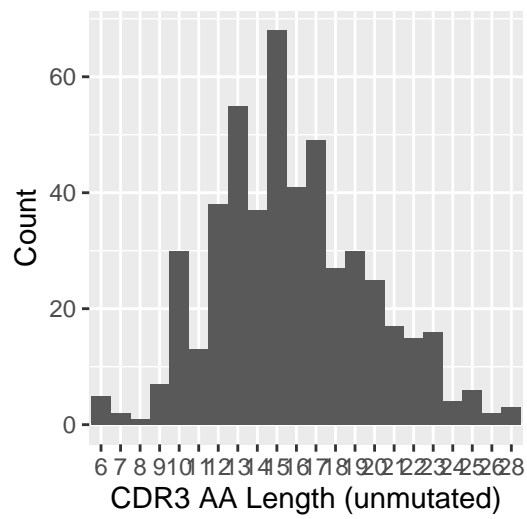
IGHV7-128*01

34 sequences assigned
No exact matches.

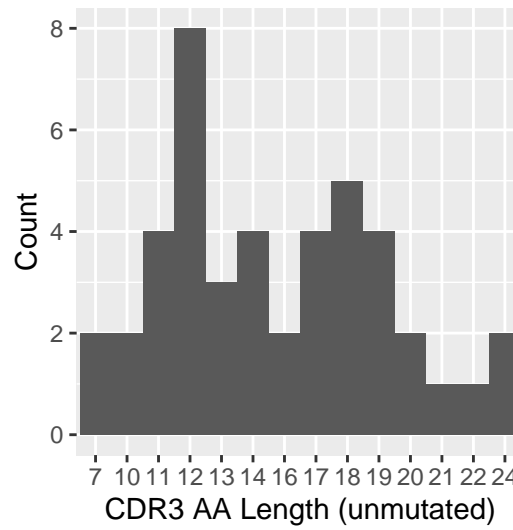




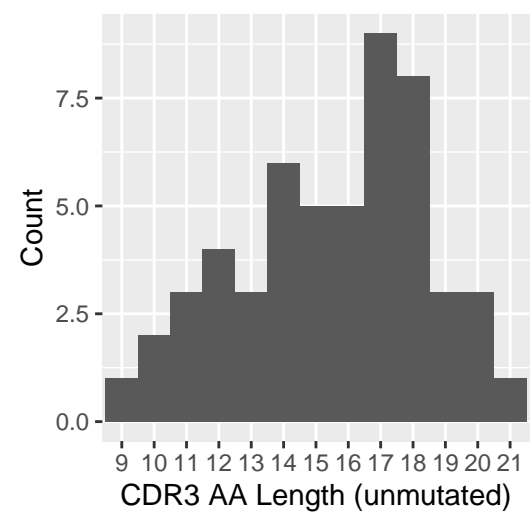
IGHV3-54*02_G170C



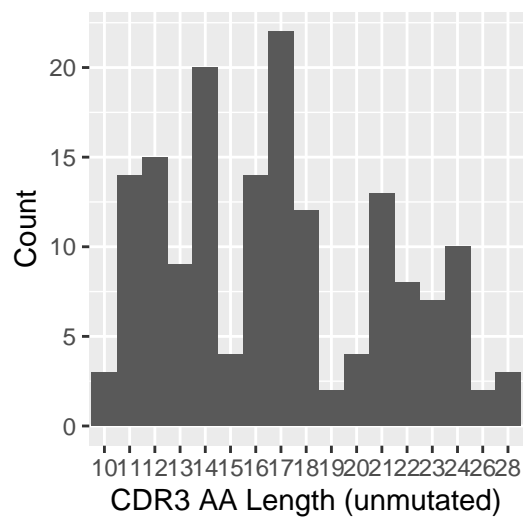
IGHV1-111*02_G240A



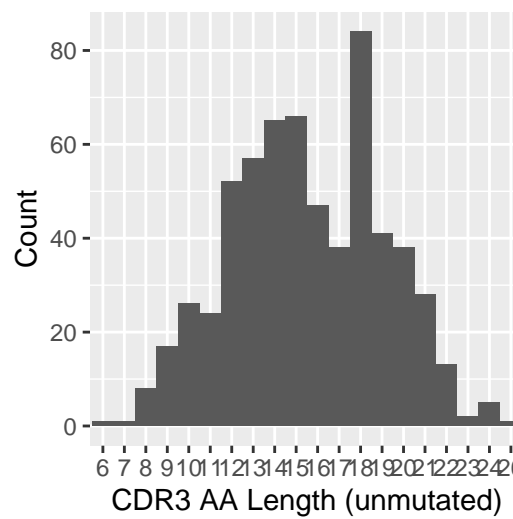
IGHV4-122*02_C87T_G103



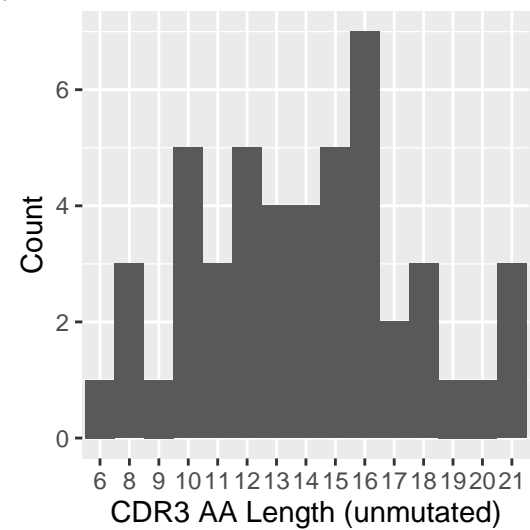
IGHV5-20*02_G259A



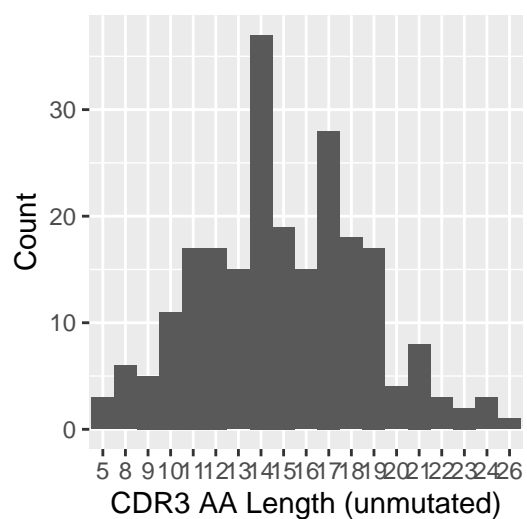
IGHV3-103*01_T19A_G24C



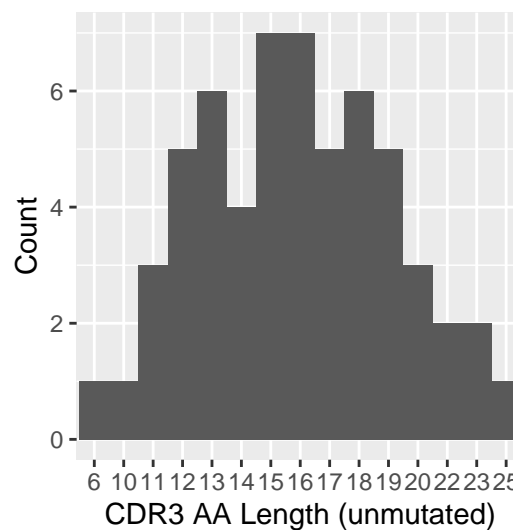
IGHV4-127*01_C34G_T82G



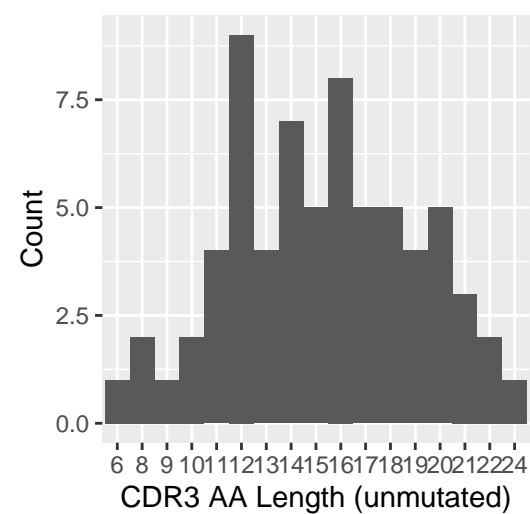
IGHV5-20*02_A141G_C312



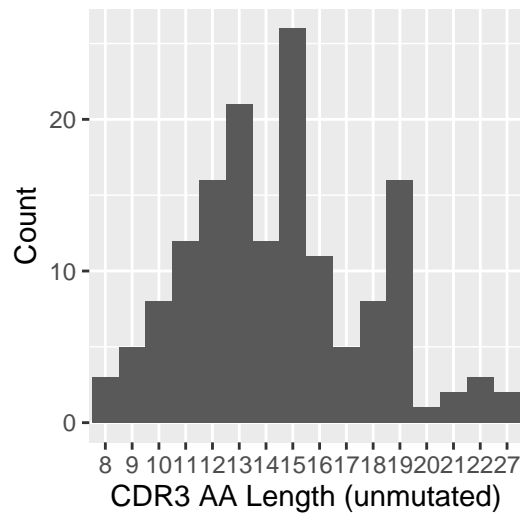
IGHV4-73*01_G147A_G189C



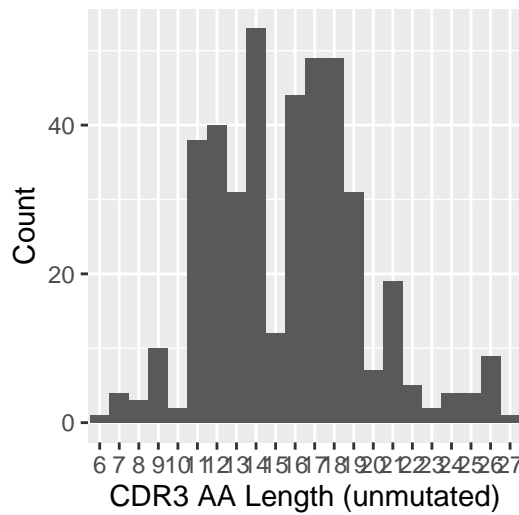
IGHV4-160*01_A162G_C16



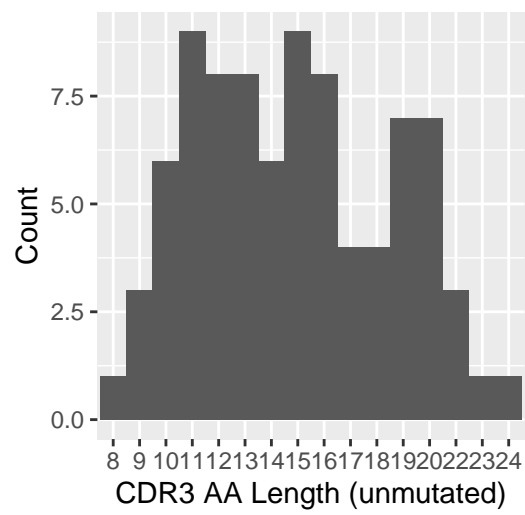
IGHV4-165*01_A132G_C16



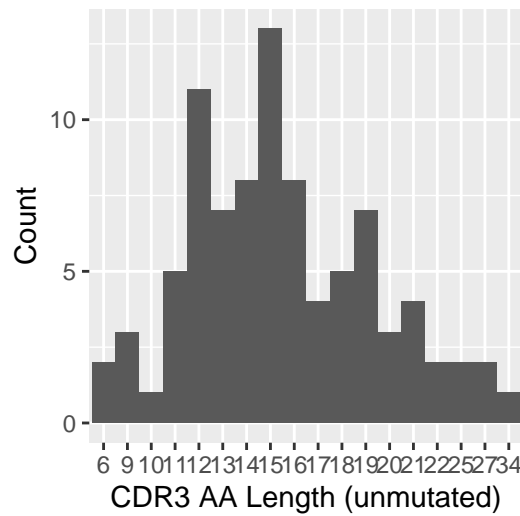
IGHV5-43*01_A109T_G110/



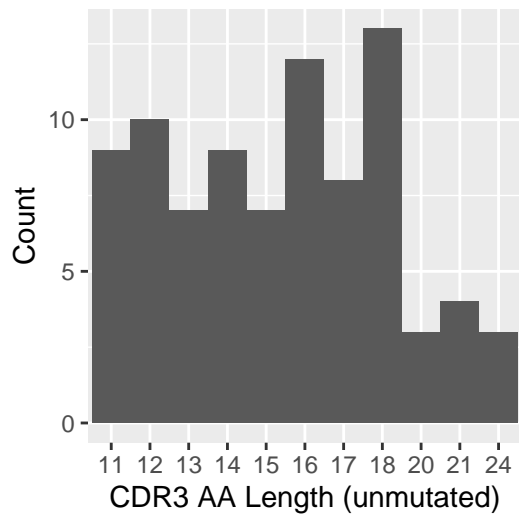
IGHV2S1*01_T210G_G289T



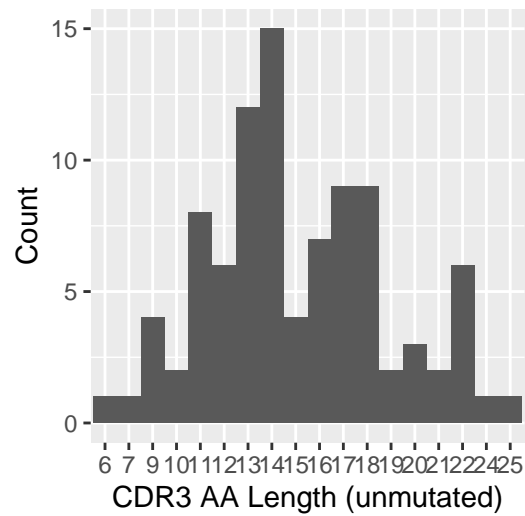
IGHV4-173*01_C4G



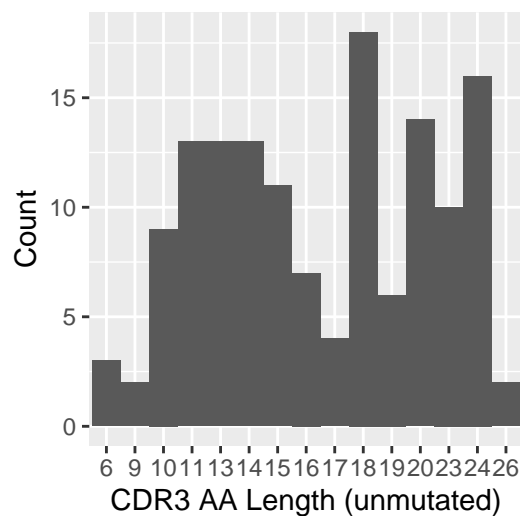
IGHV2-10*01_C6G_A23G_C



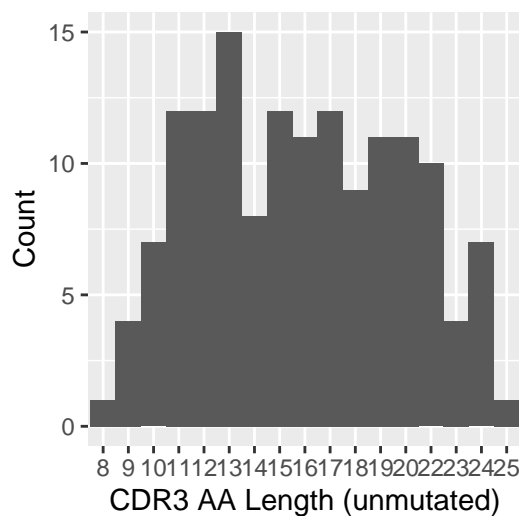
IGHV4S10*01_A48G_T112C



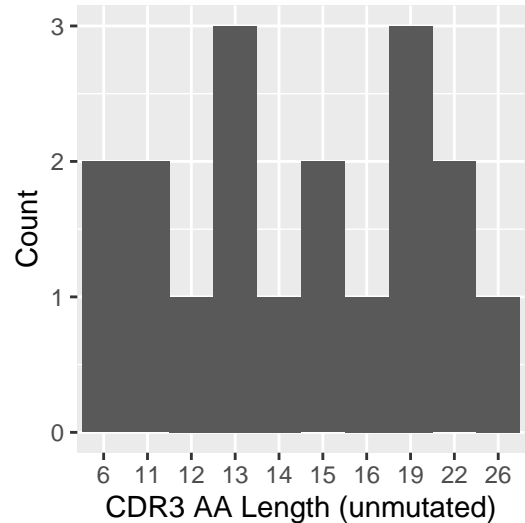
IGHV5-43*01_A106G_C297

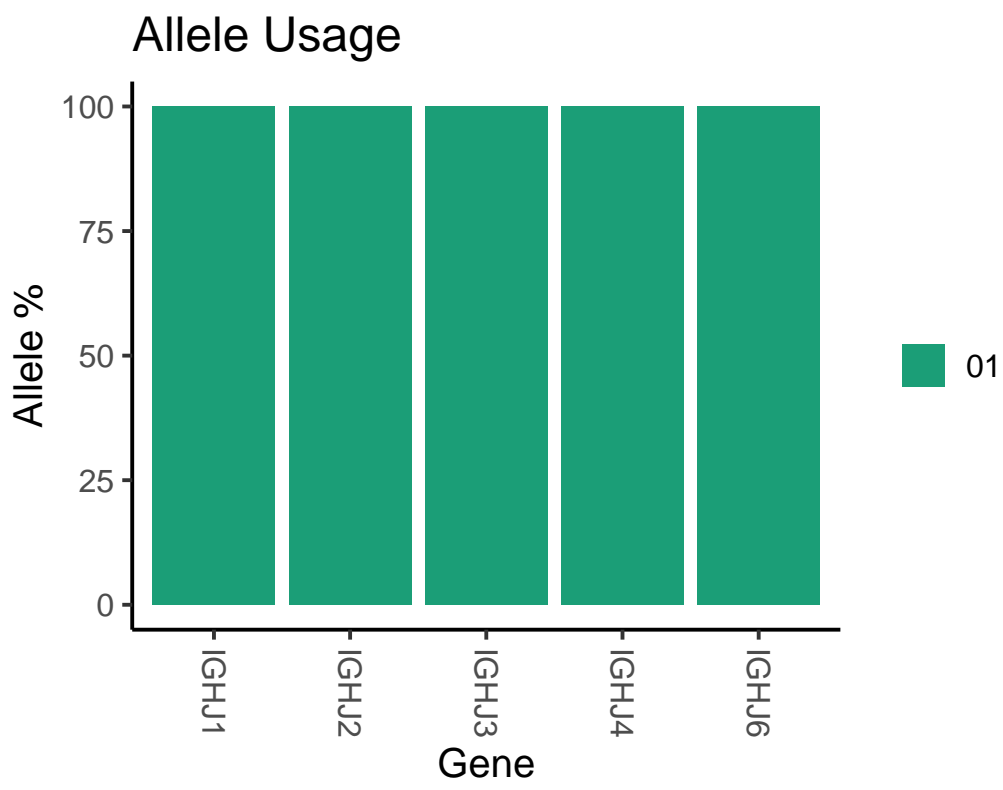


IGHV2S1*01_T210G



IGHV4-169*01_C4G_T60C_C





Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.