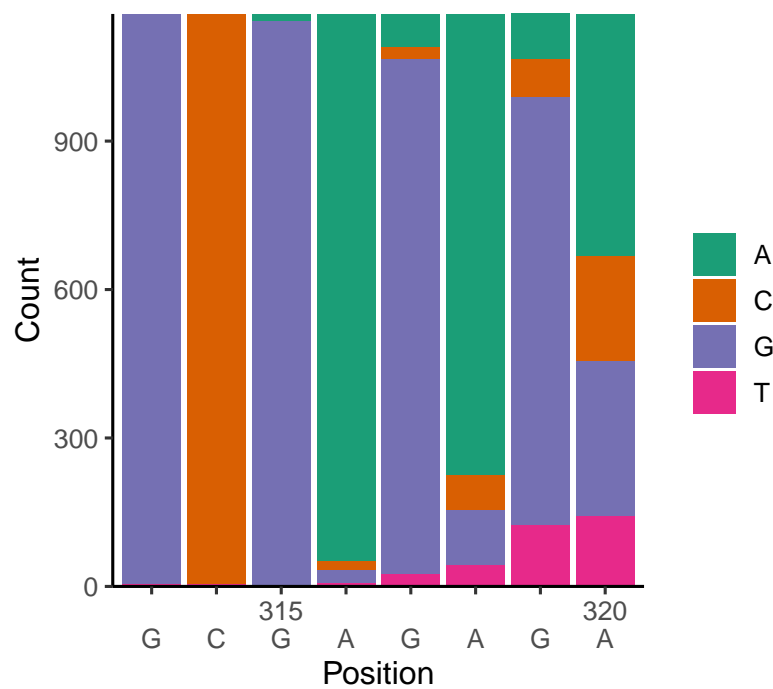
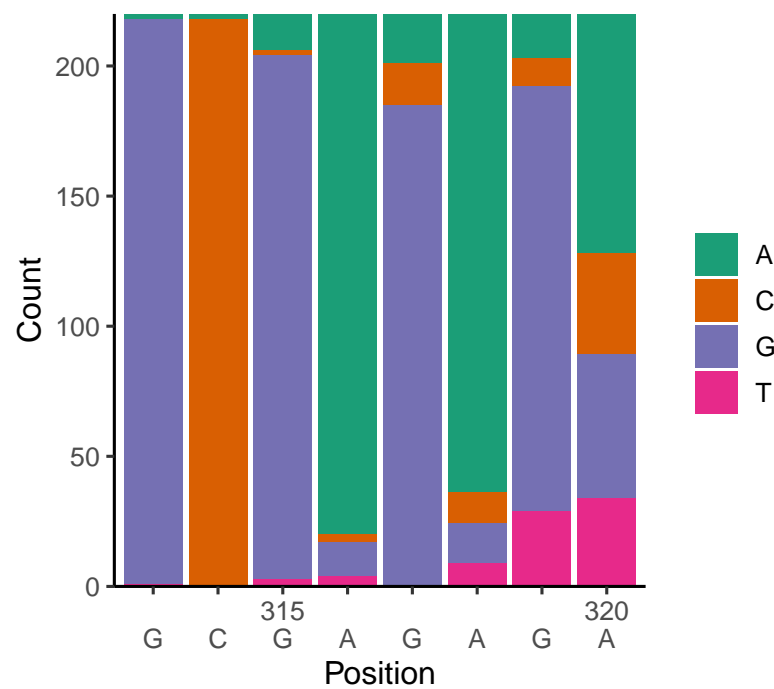


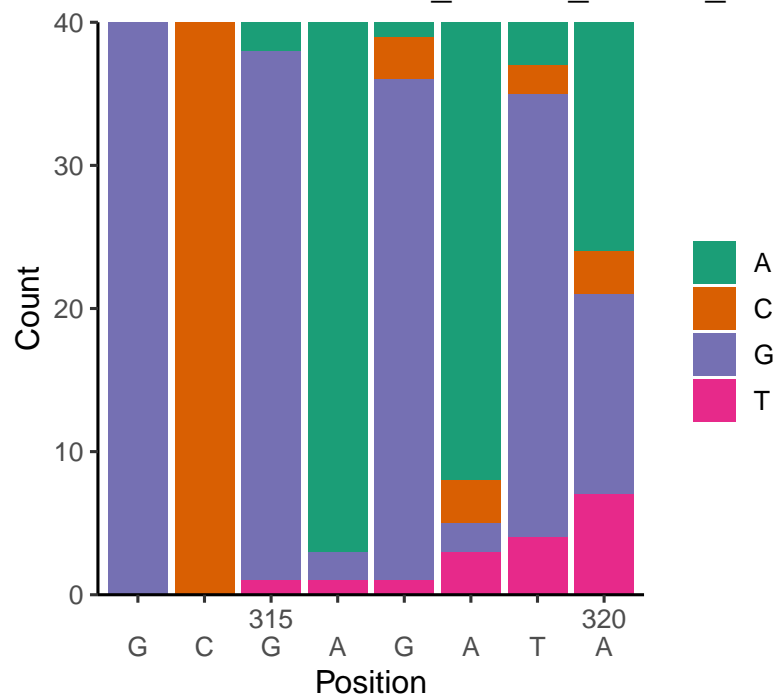
Gene IGHV1-24*01_A315G_C317G



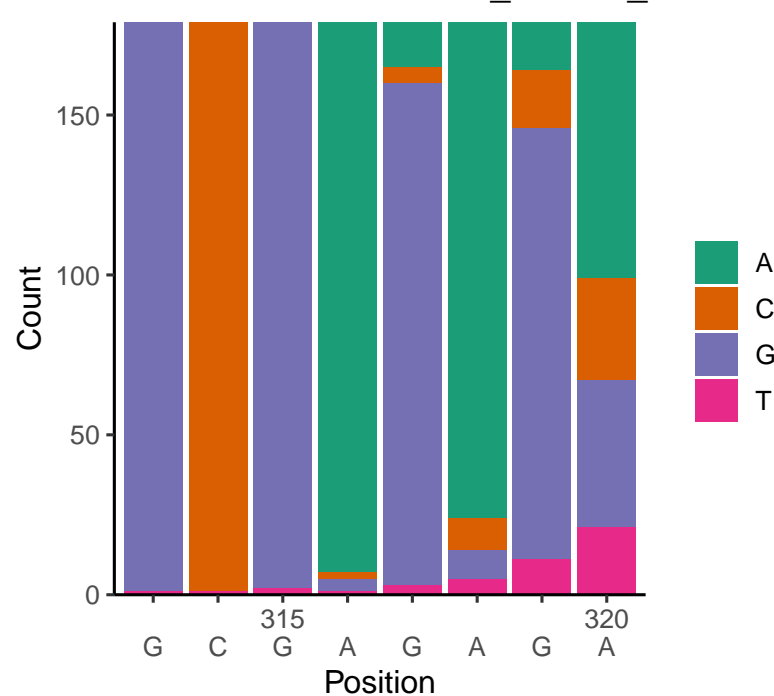
Gene IGHV1-58*02_G316A_C317G



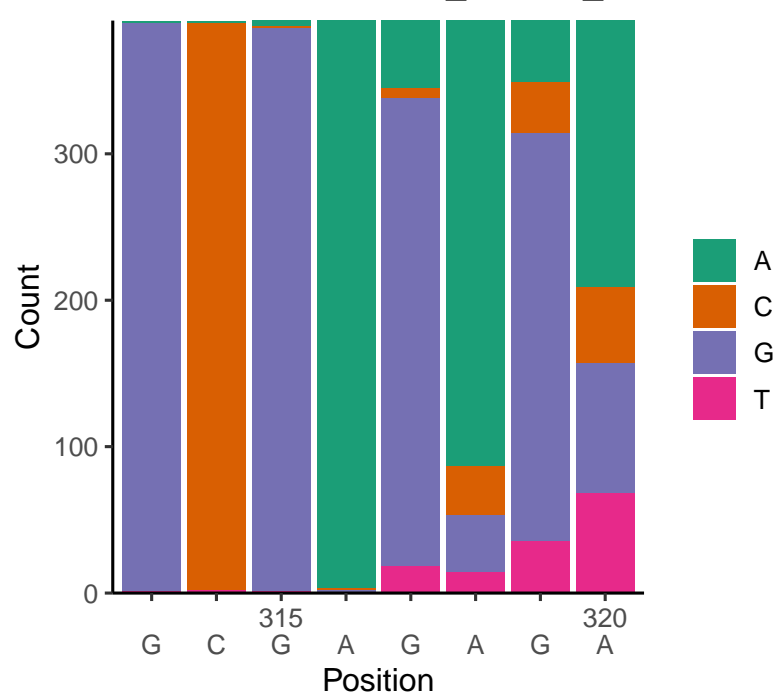
Gene IGHV1-45*02_A297G_A301G_A315



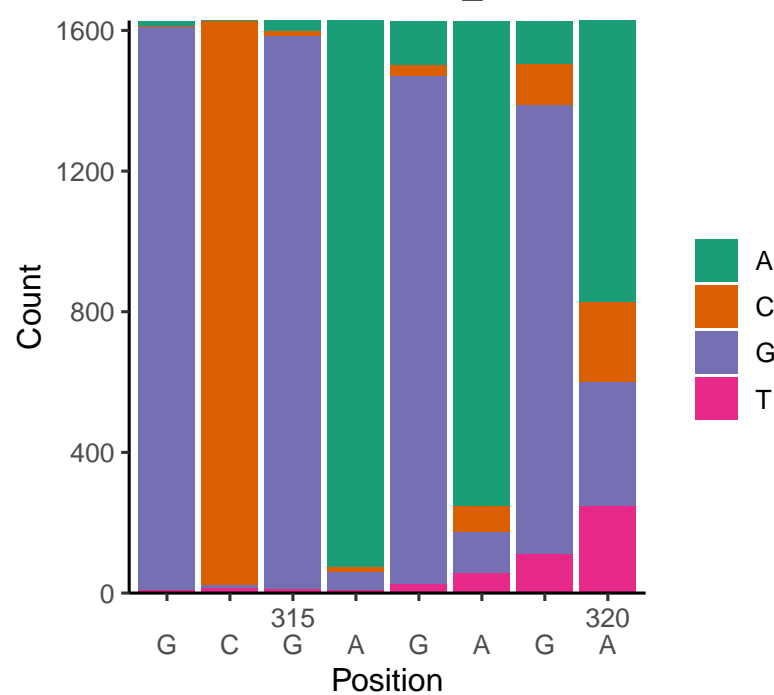
Gene IGHV1-69-2*01_A315G_C317G



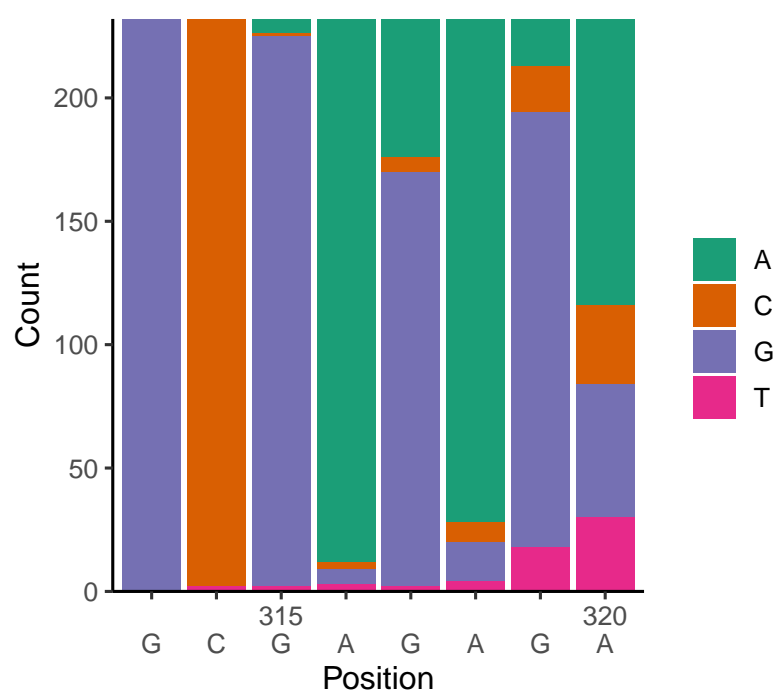
Gene IGHV1-58*01_G316A_C317G



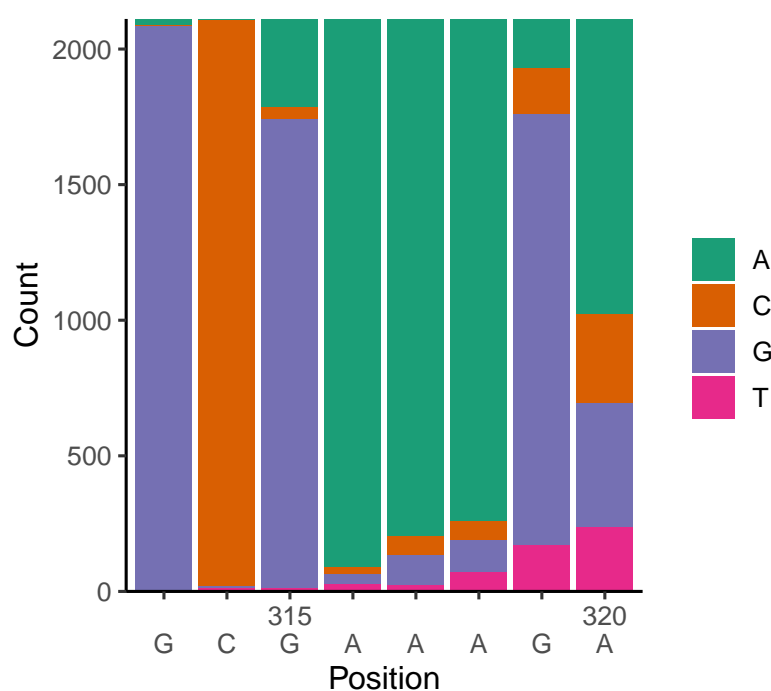
Gene IGHV3-11*04_G240A



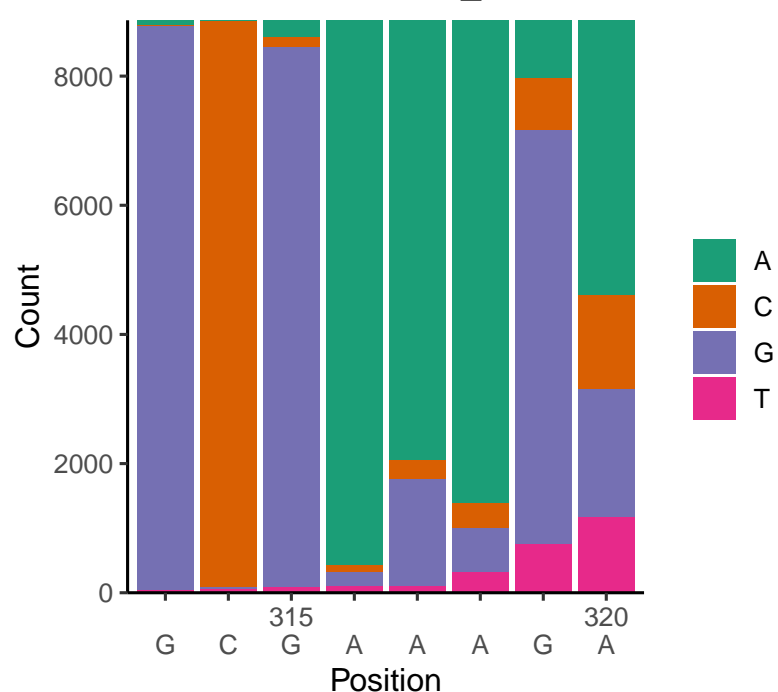
Gene IGHV3-20*04_C258A_T279C_C30



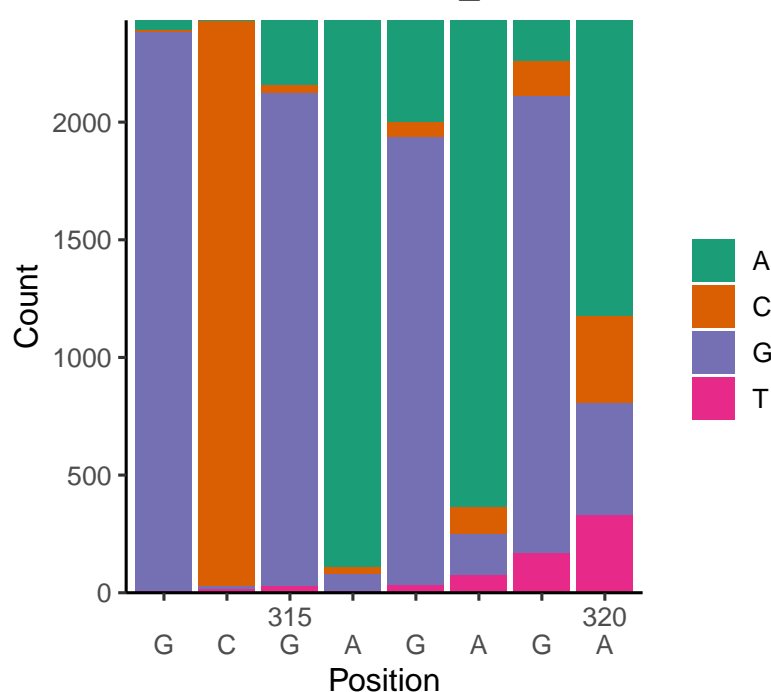
Gene IGHV3-33*06_T300C_G303A



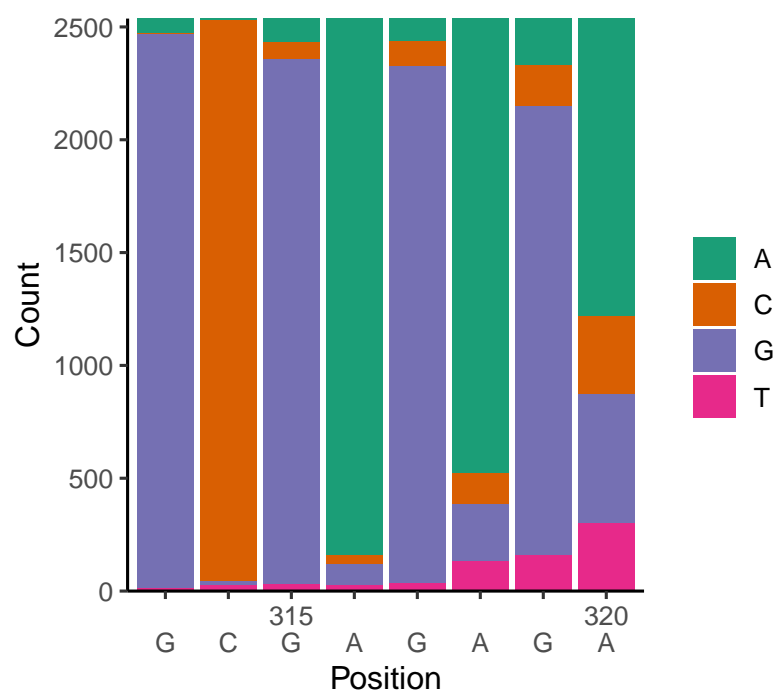
Gene IGHV3-23*04_A39C



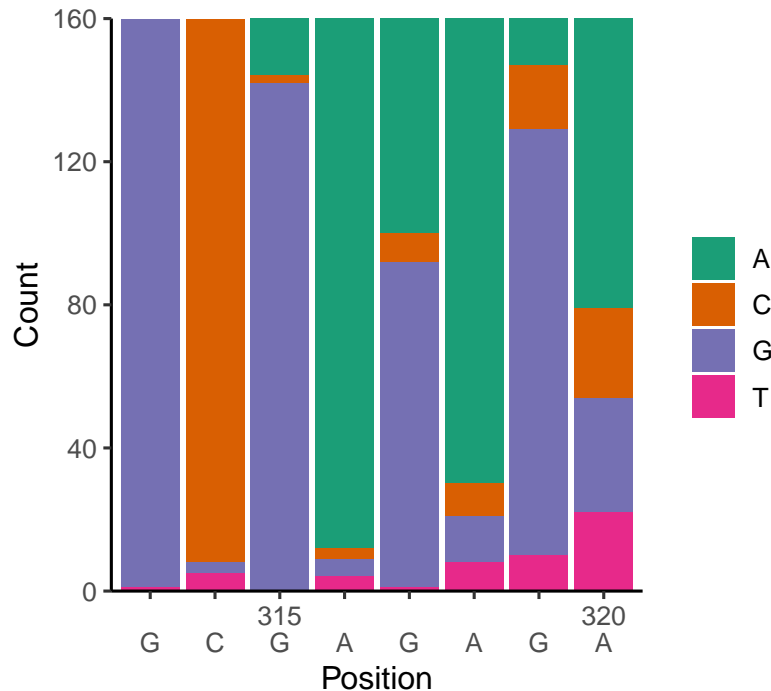
Gene IGHV3-48*03_T303G



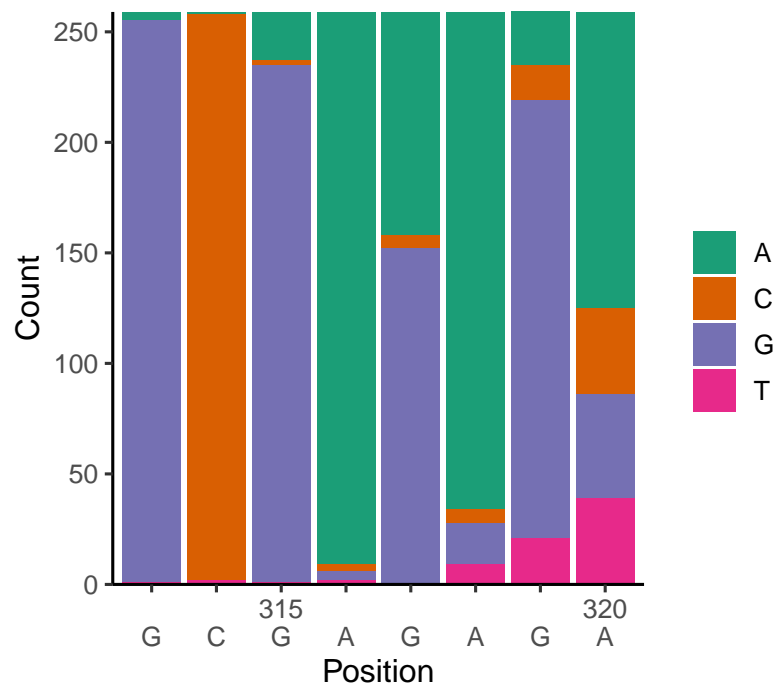
Gene IGHV3-30*03_T288C



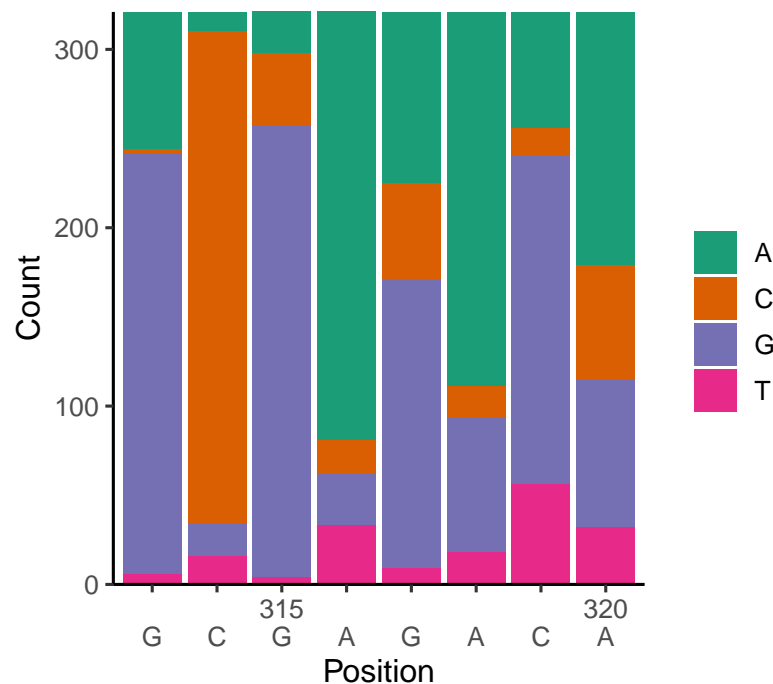
Gene IGHV3-49*03_A313G_T315G



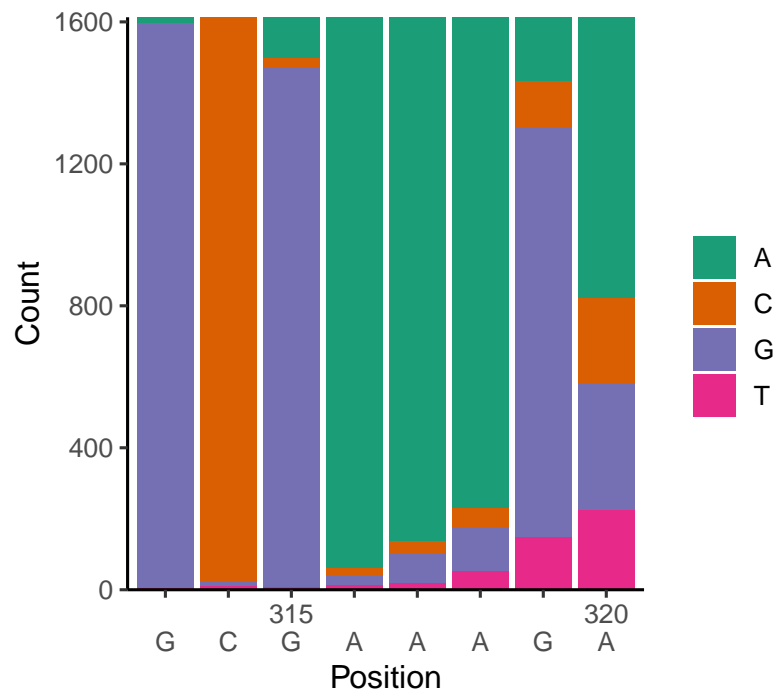
Gene IGHV3-49*04_A313G_T315G



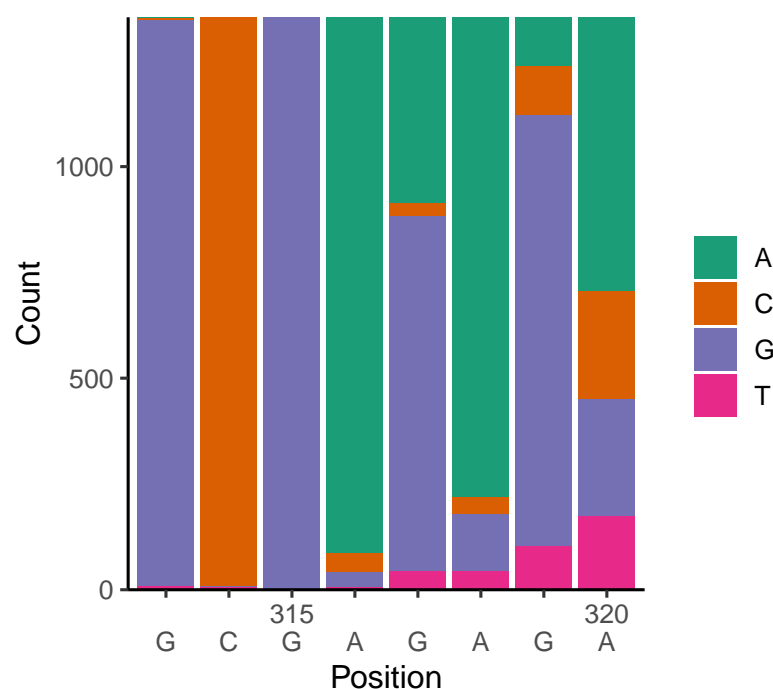
Gene IGHV3-73*02_A313G_T315G



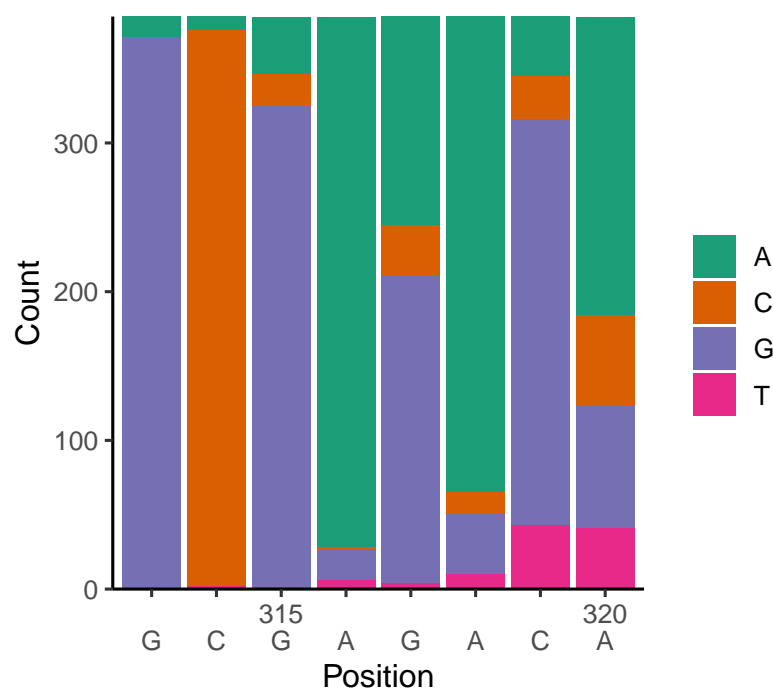
Gene IGHV3-53*01_T267G_G303A_G3



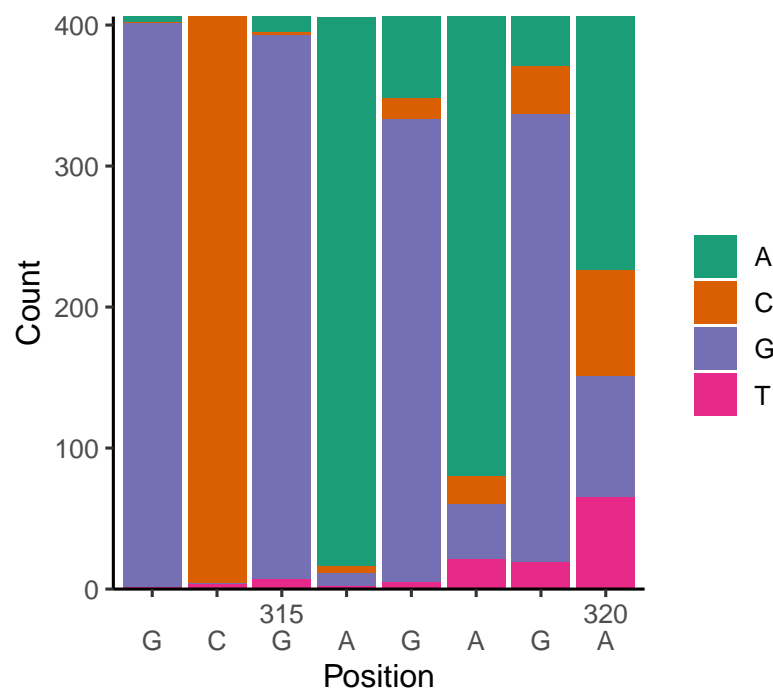
Gene IGHV3-74*01_A315G



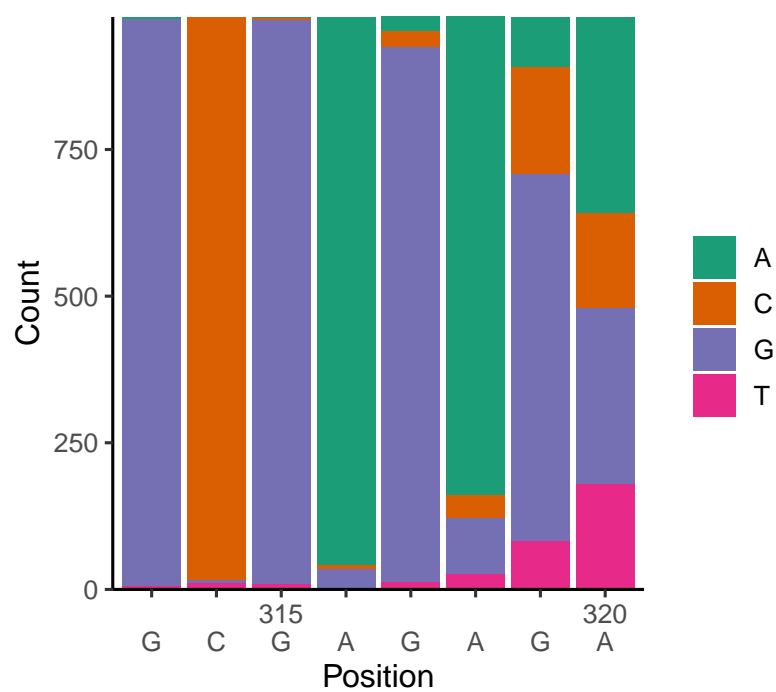
Gene IGHV3-73*01_A313G_T315G



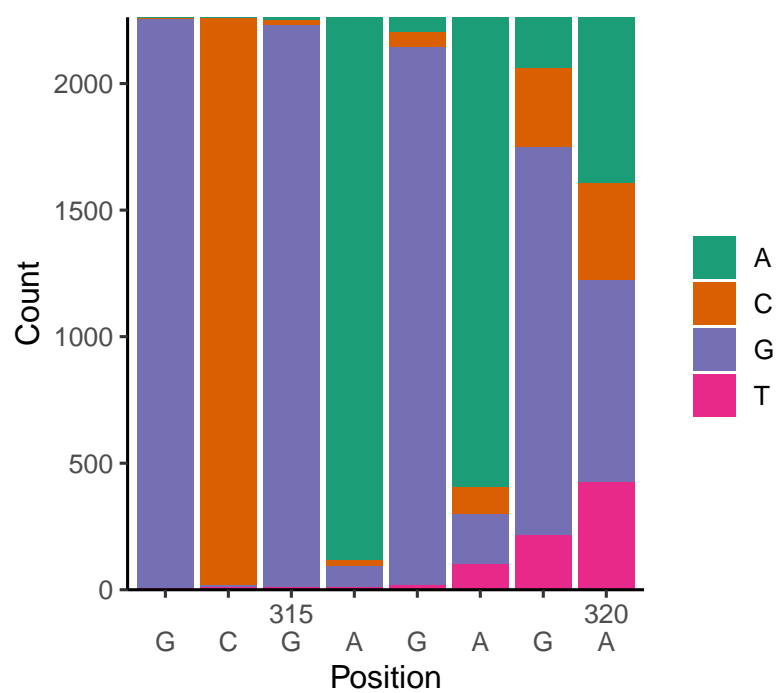
Gene IGHV3-NL1*01_G49A_G75C_C155



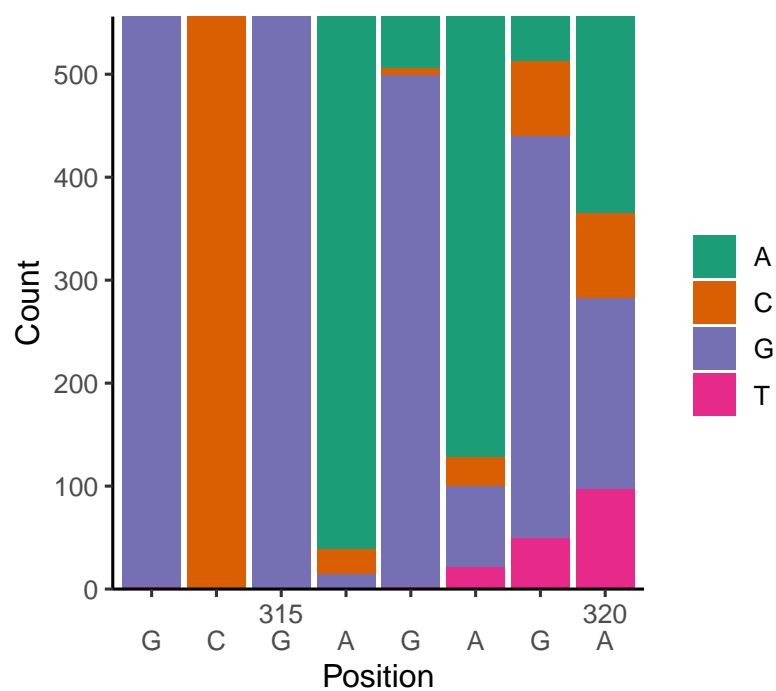
Gene IGHV4-61*01_G4C_G88A_G103A



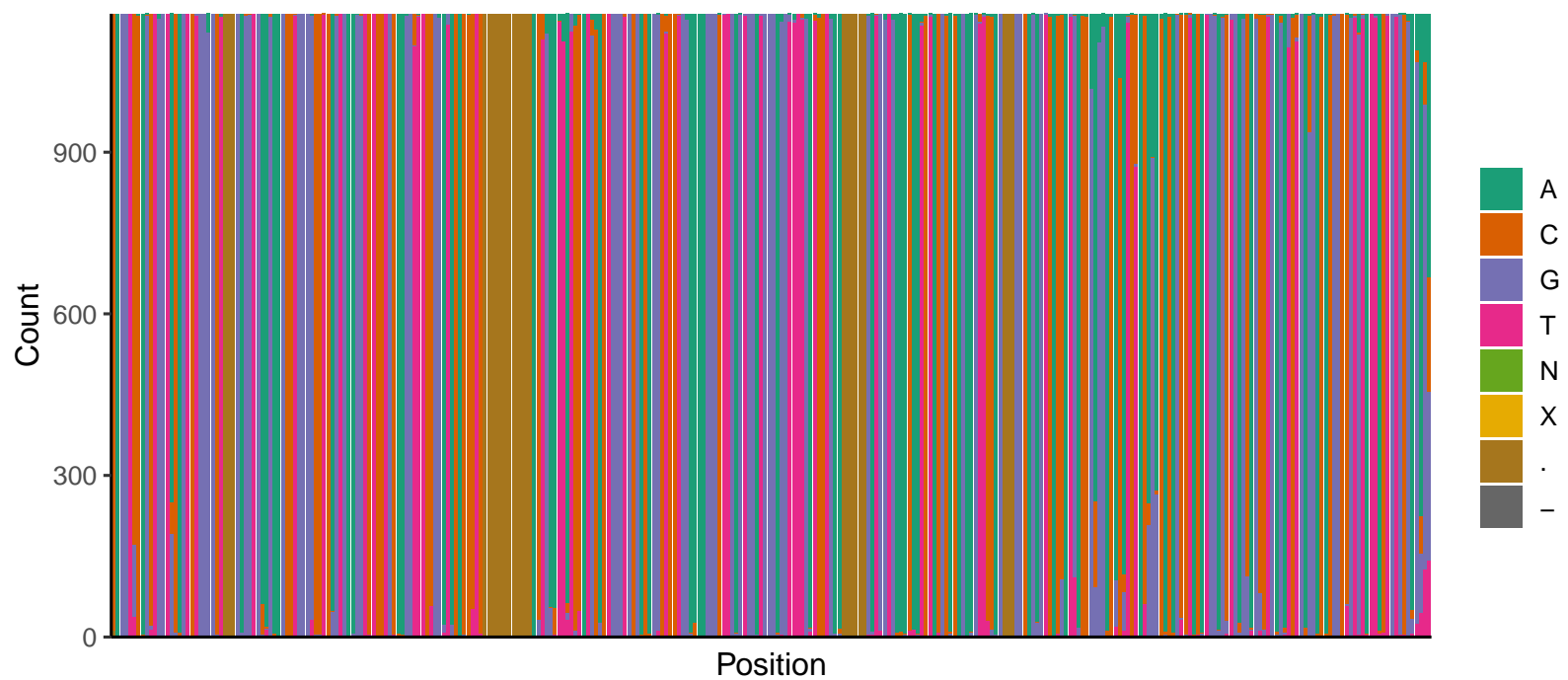
Gene IGHV4-61*08_G48A_G49C_G88A



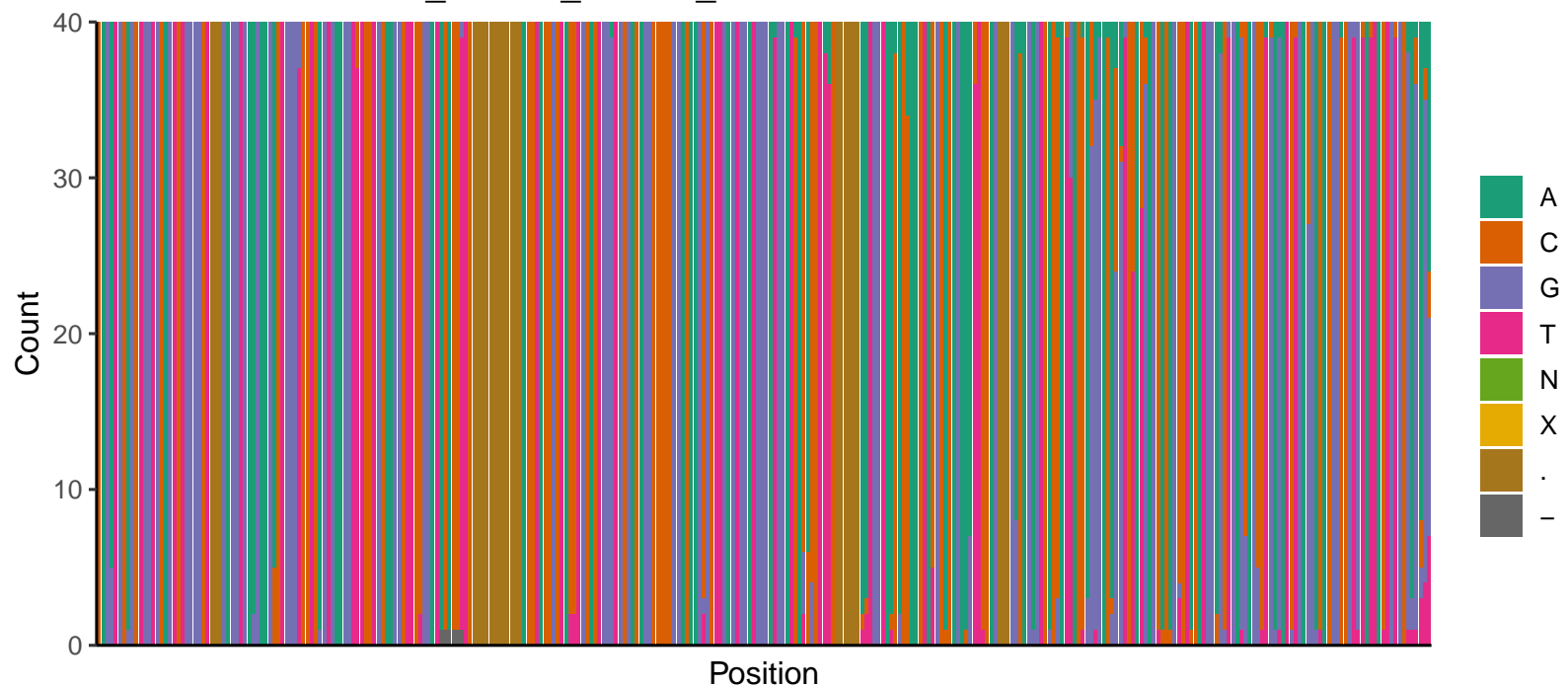
Gene IGHV6-1*01_A315G



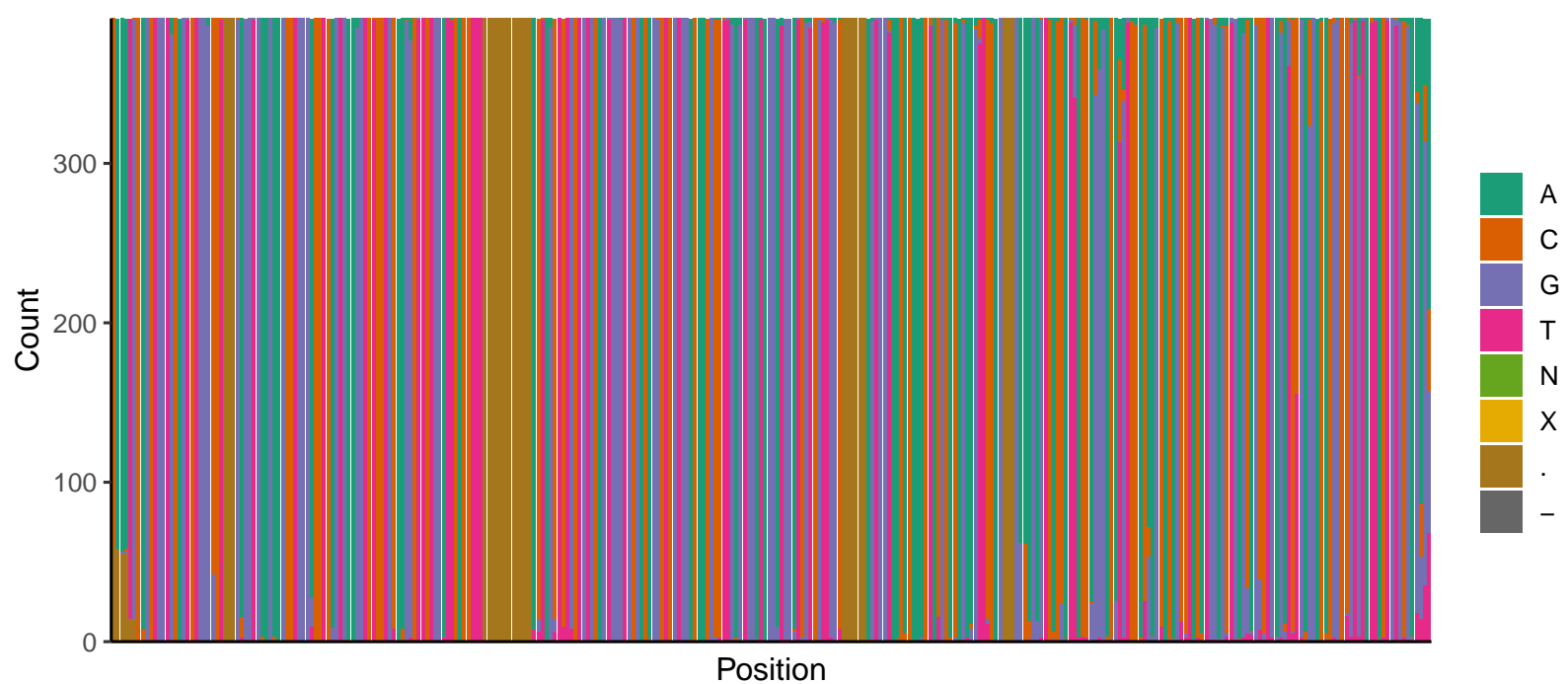
Gene IGHV1-24*01_A315G_C317G



Gene IGHV1-45*02_A297G_A301G_A315G



Gene IGHV1-58*01_G316A_C317G



Gene IGHV1-58*02_G316A_C317G



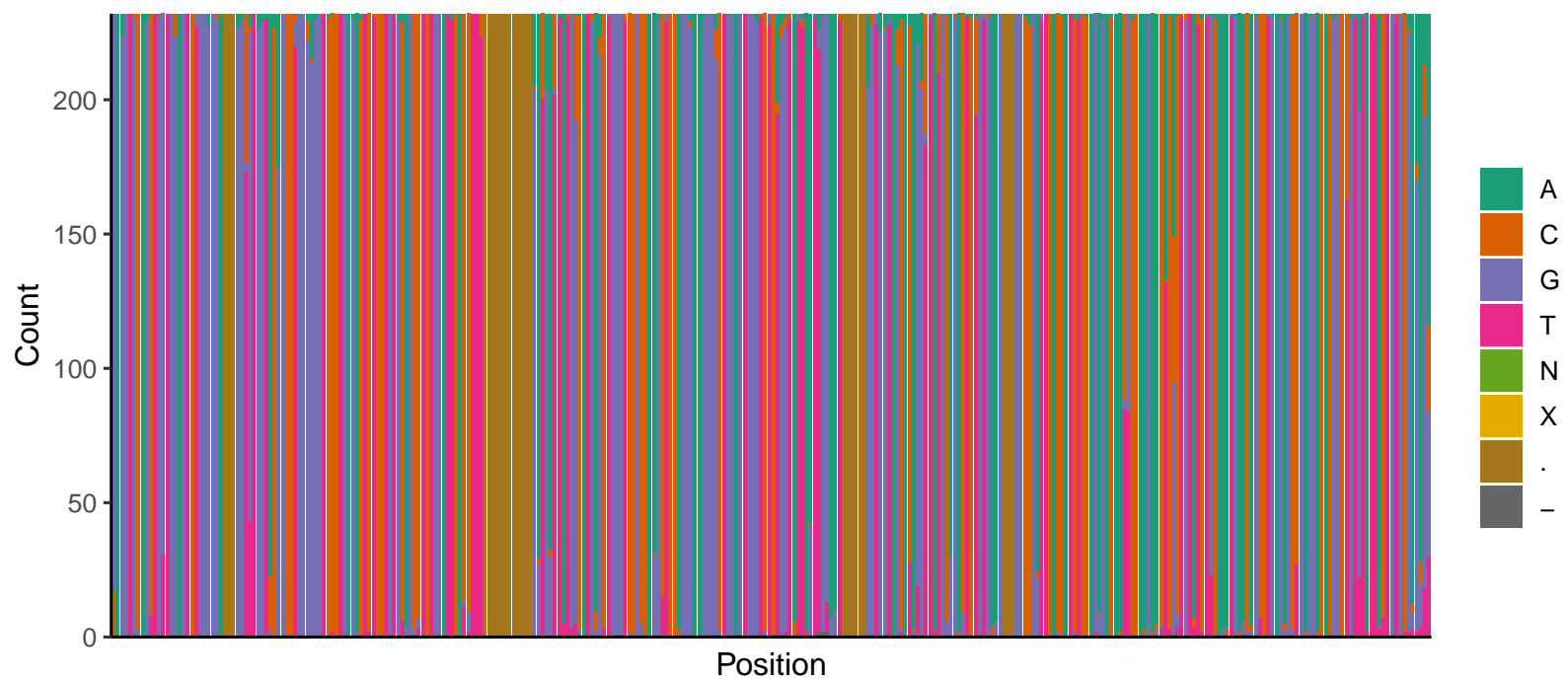
Gene IGHV1-69-2*01_A315G_C317G



Gene IGHV3-11*04_G240A



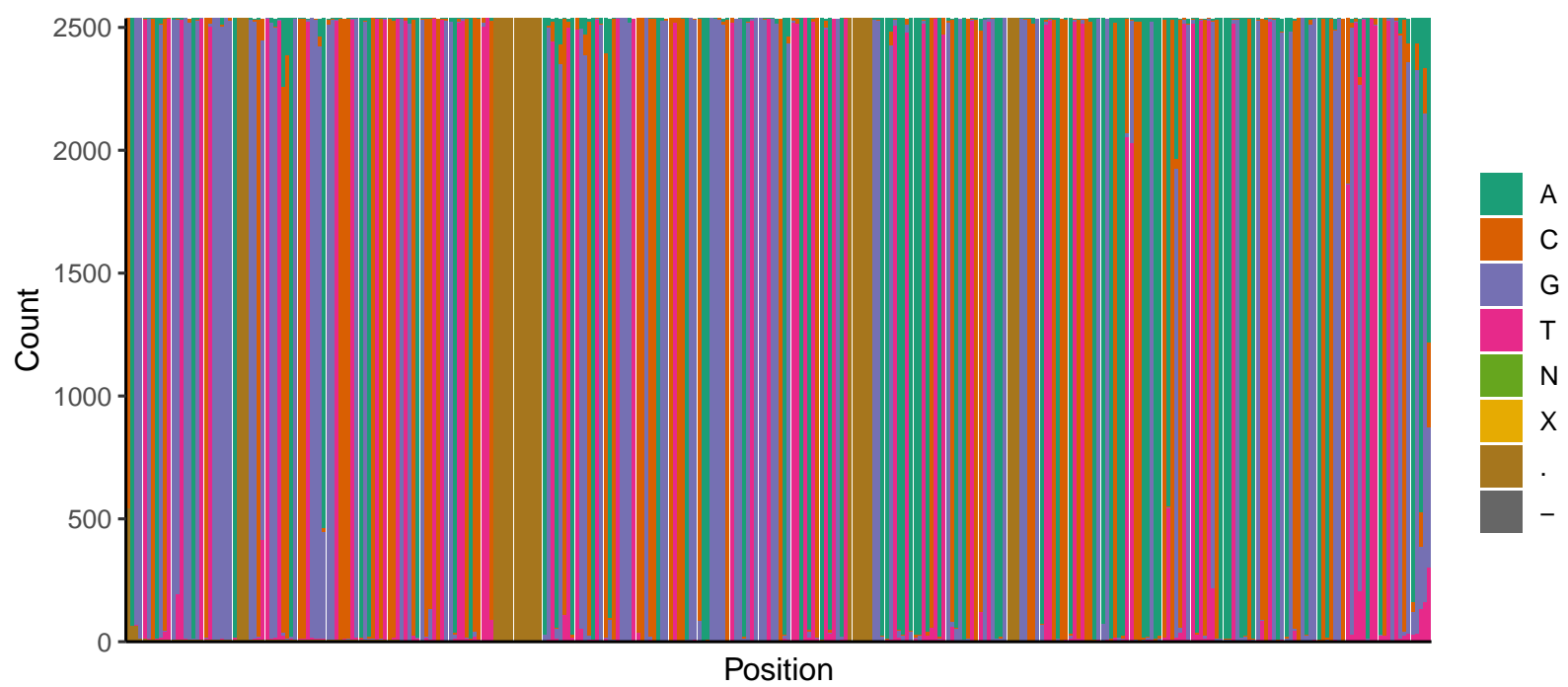
Gene IGHV3-20*04_C258A_T279C_C300T_T301G



Gene IGHV3-23*04_A39C



Gene IGHV3-30*03_T288C



Gene IGHV3-33*06_T300C_G303A



Gene IGHV3-48*03_T303G



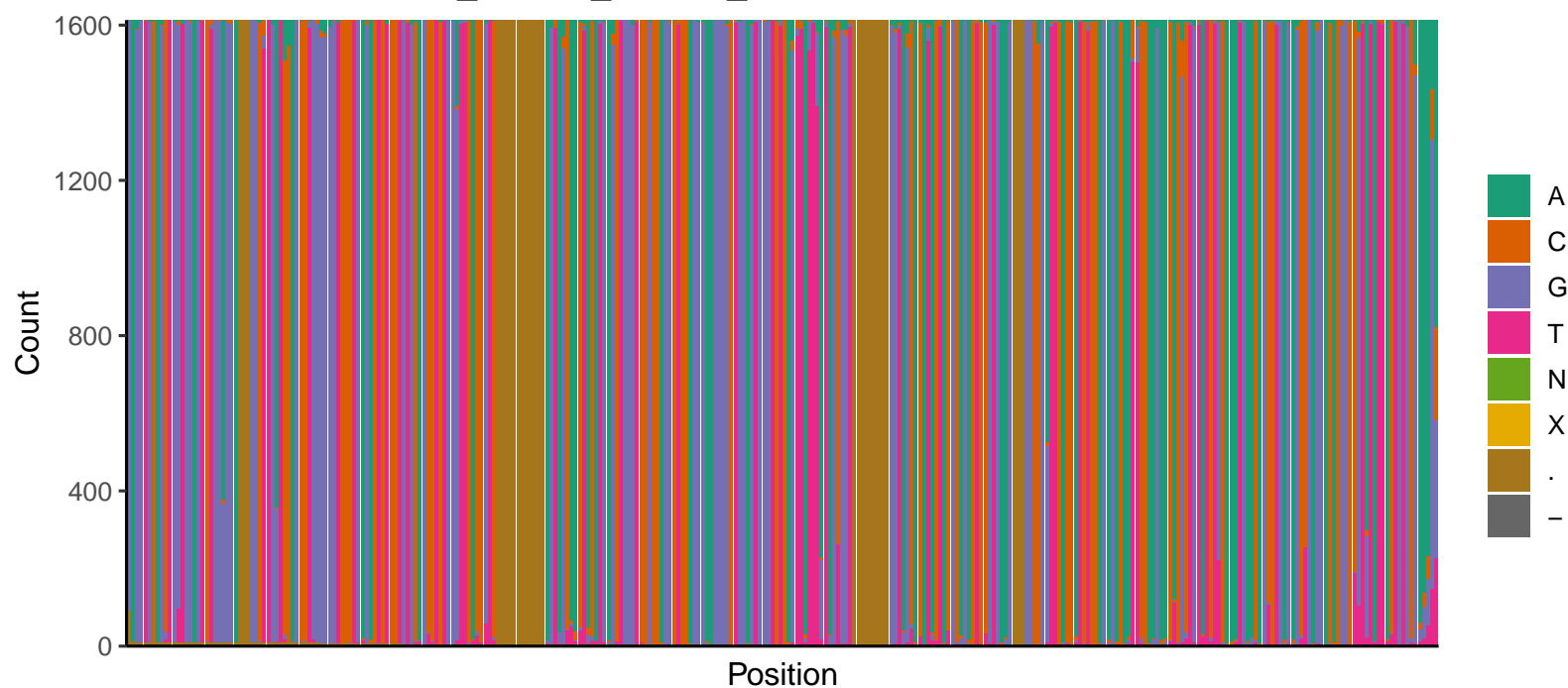
Gene IGHV3-49*03_A313G_T315G



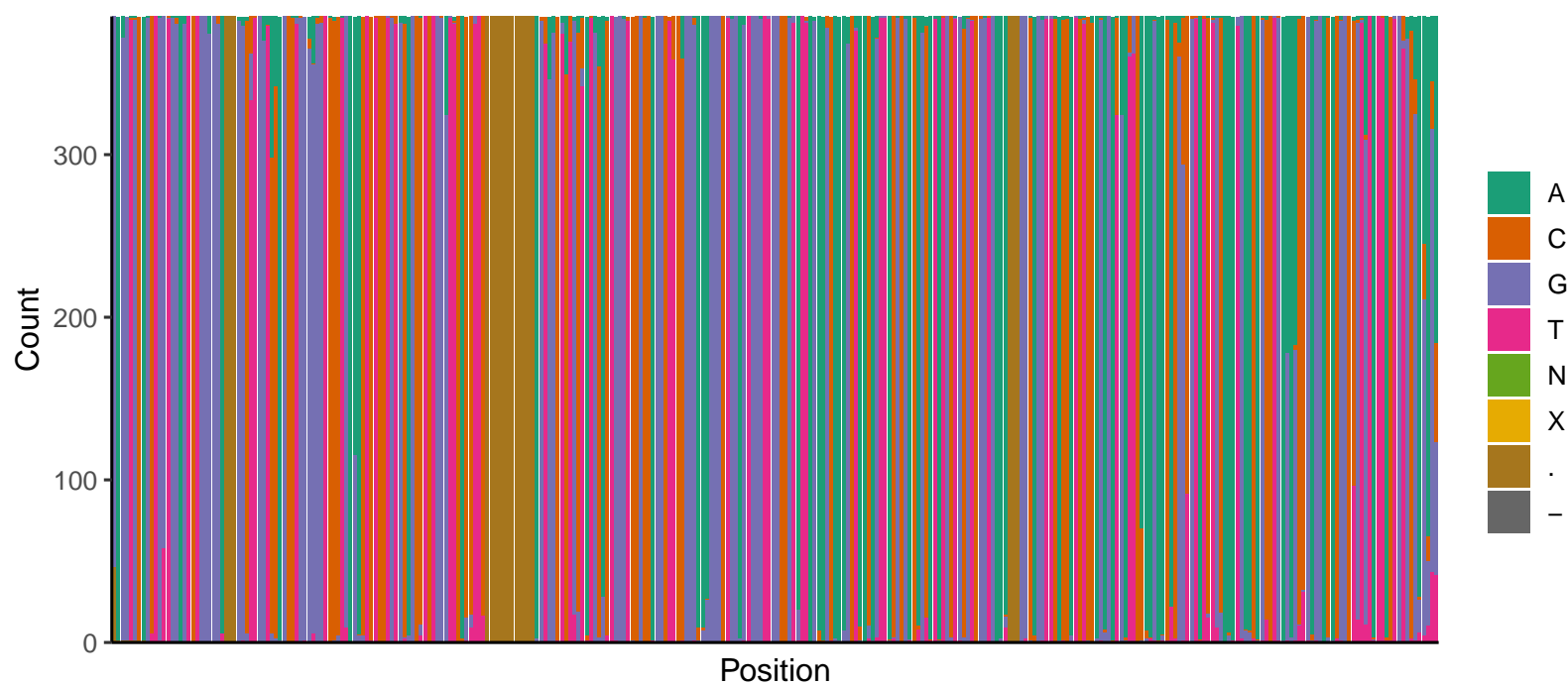
Gene IGHV3-49*04_A313G_T315G



Gene IGHV3-53*01_T267G_G303A_G317A



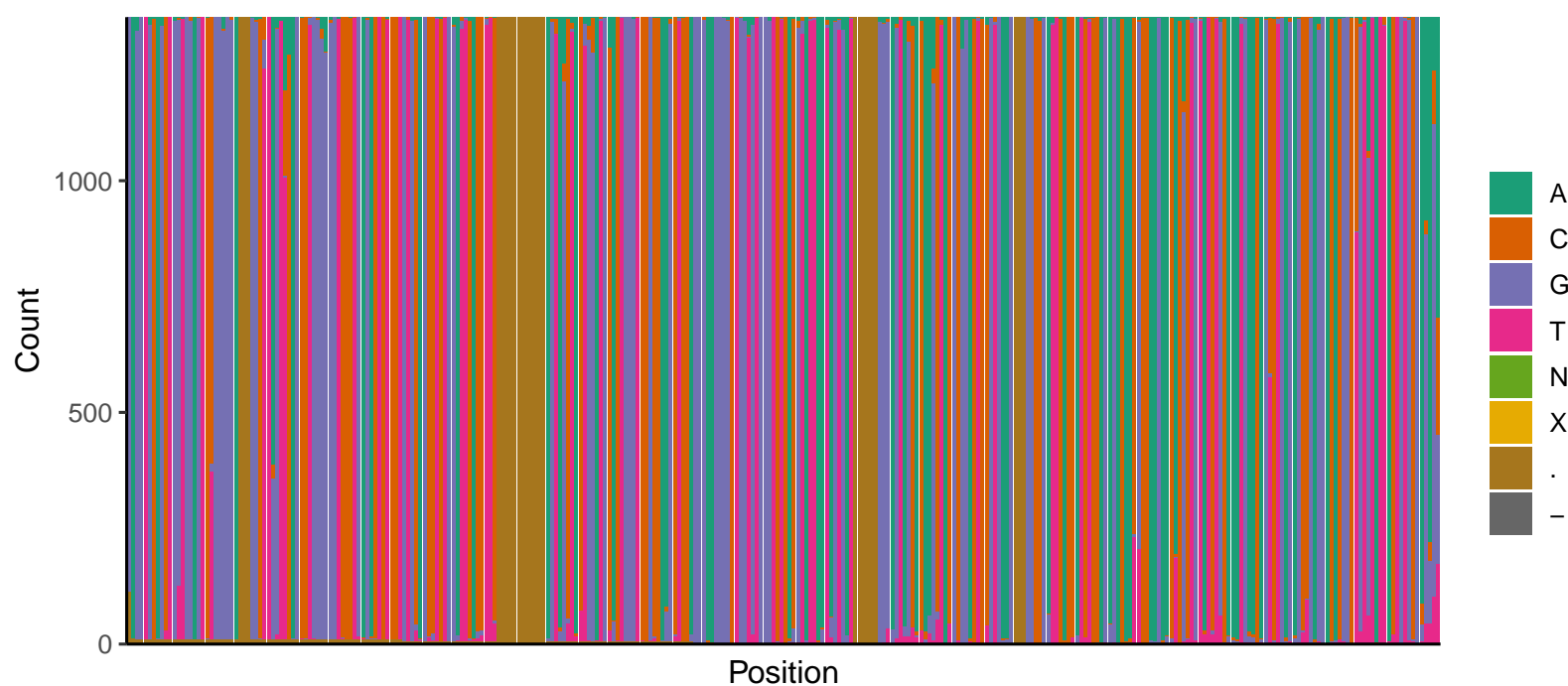
Gene IGHV3-73*01_A313G_T315G



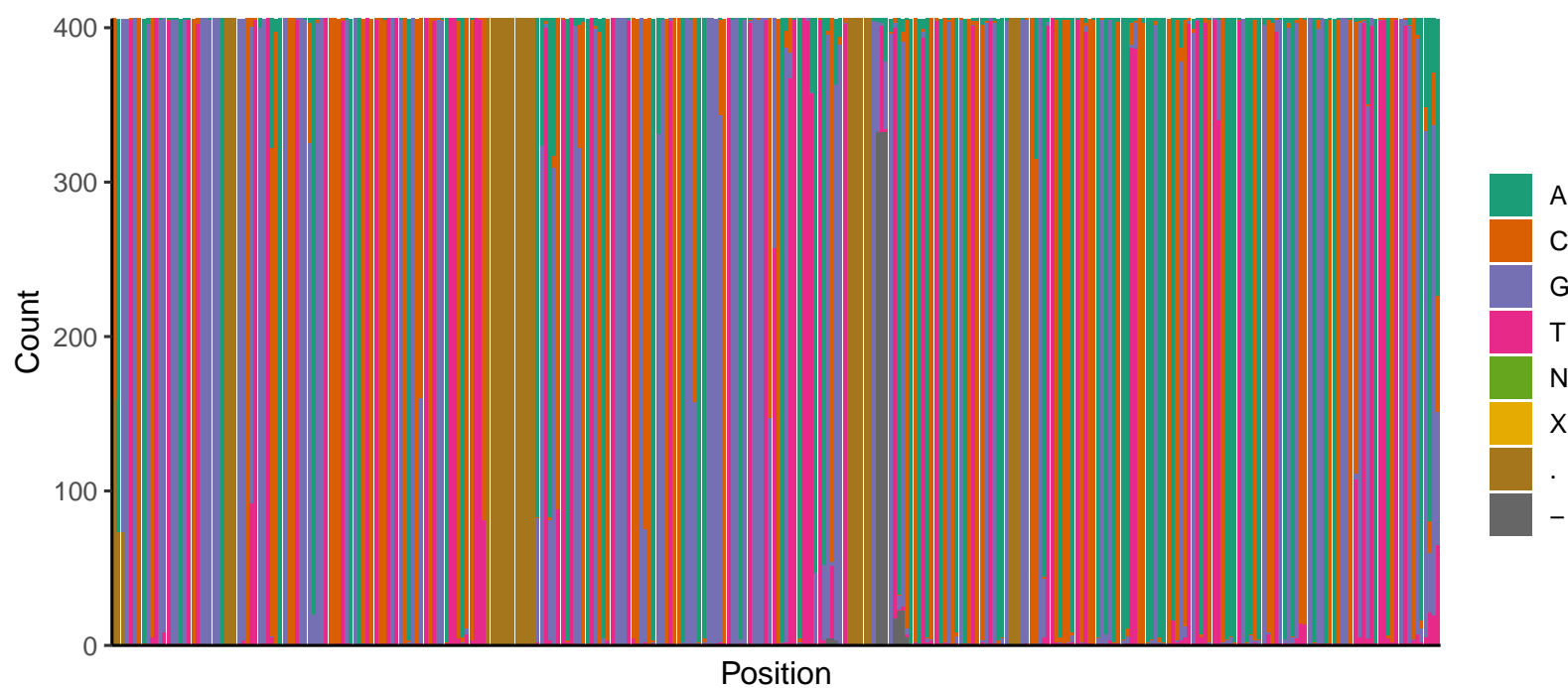
Gene IGHV3-73*02_A313G_T315G



Gene IGHV3-74*01_A315G



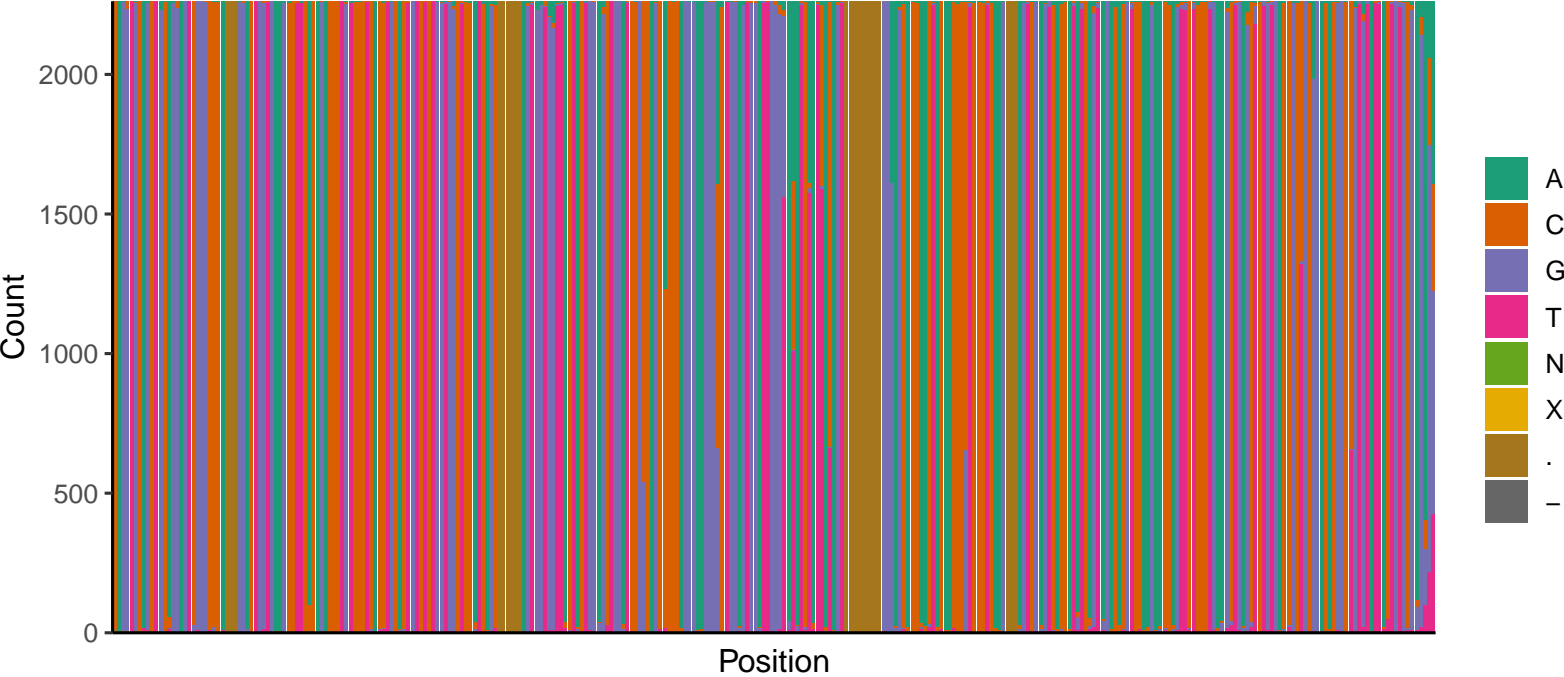
Gene IGHV3-NL1*01_G49A_G75C_C159G_T160G_T201C_G267T_T288C_T300C_A317



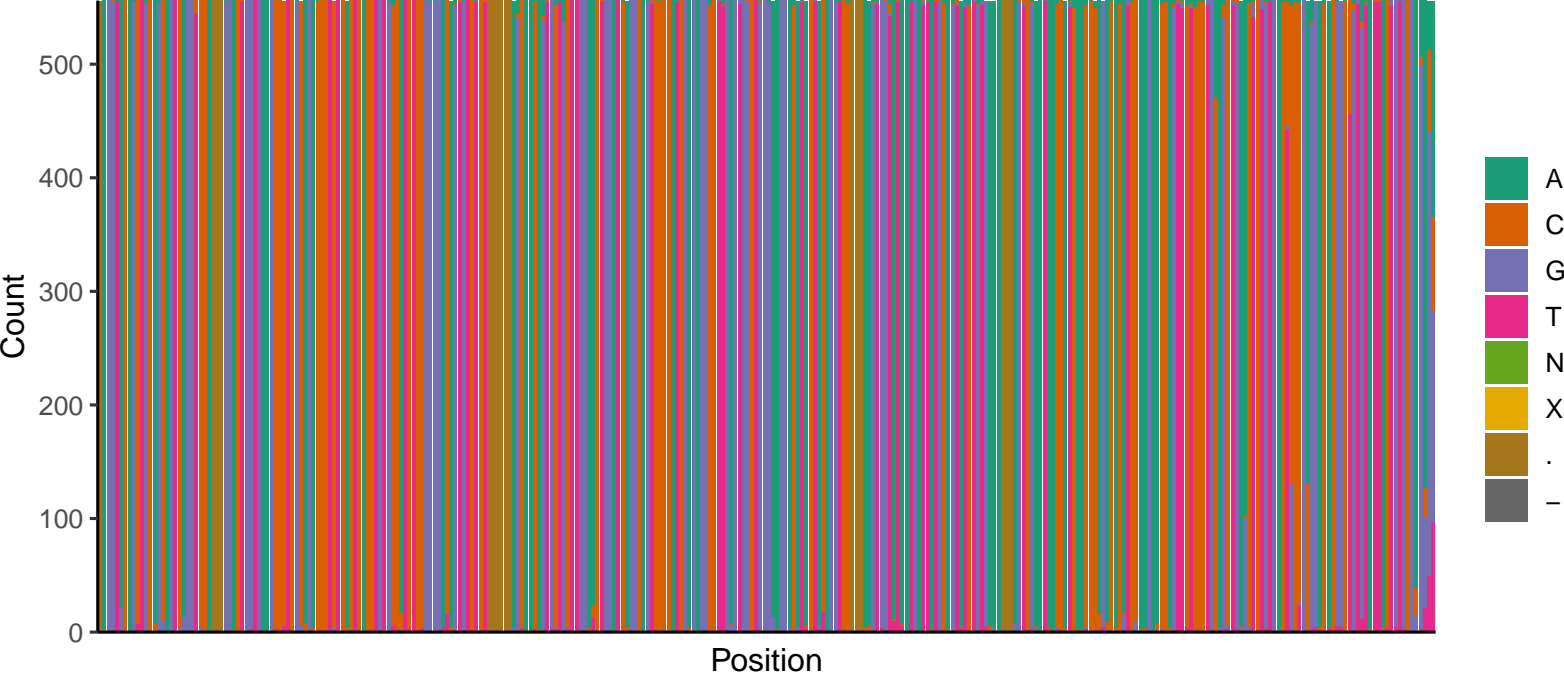
Gene IGHV4-61*01_G4C_G88A_G103A



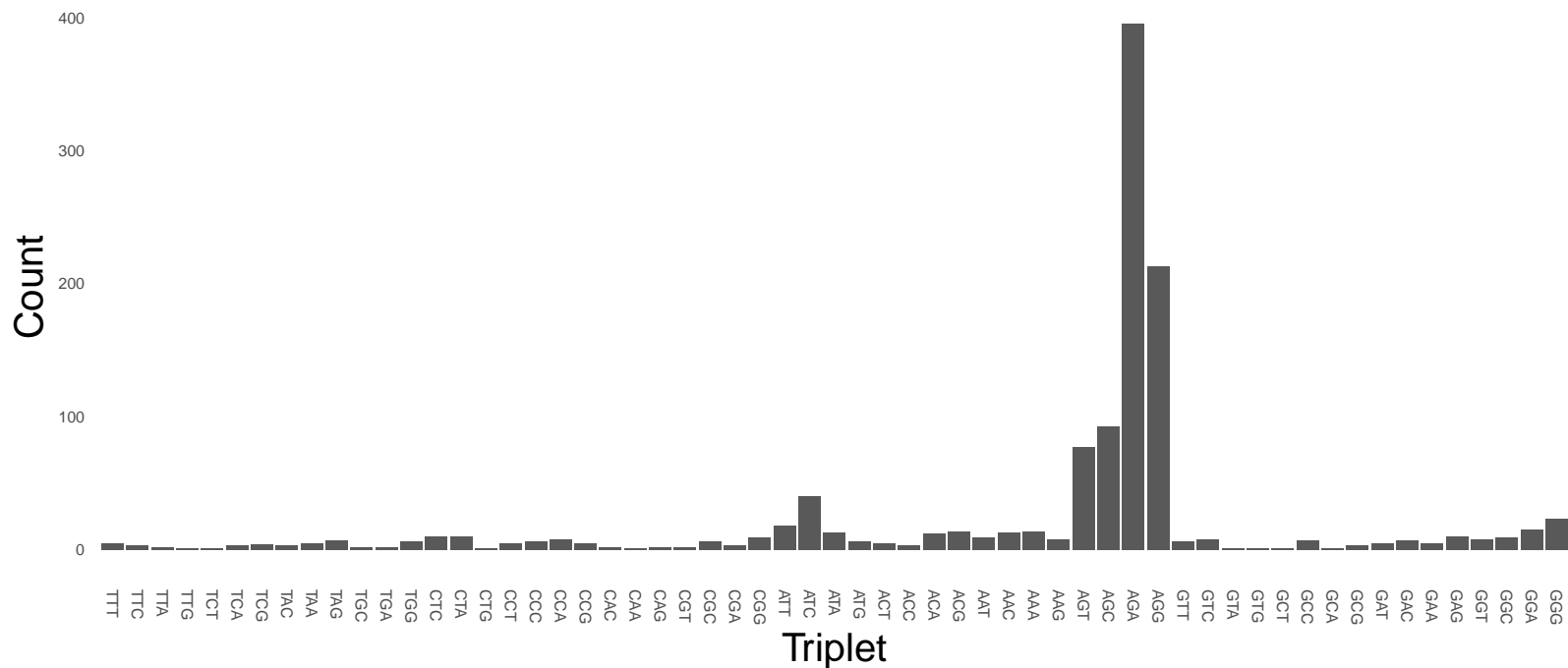
Gene IGHV4-61*08_G48A_G49C_G88A



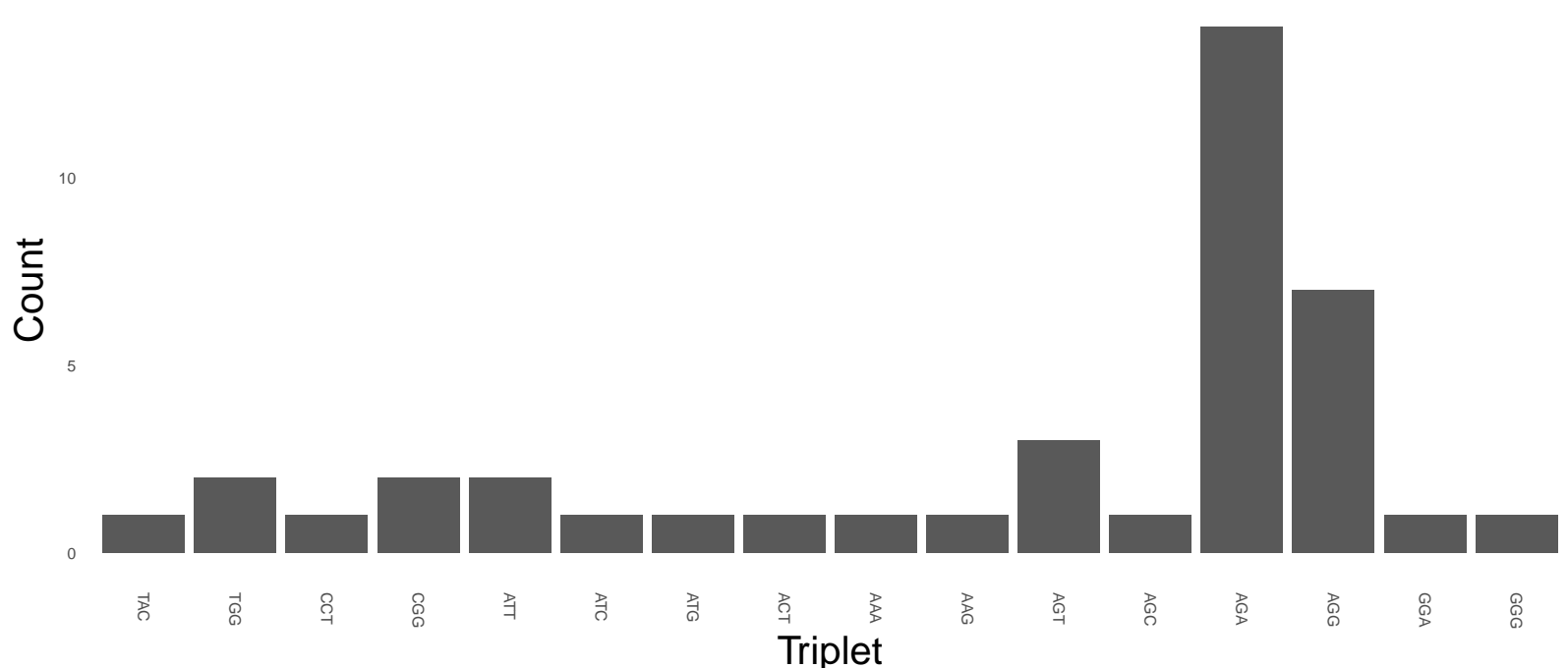
Gene IGHV6-1*01_A315G



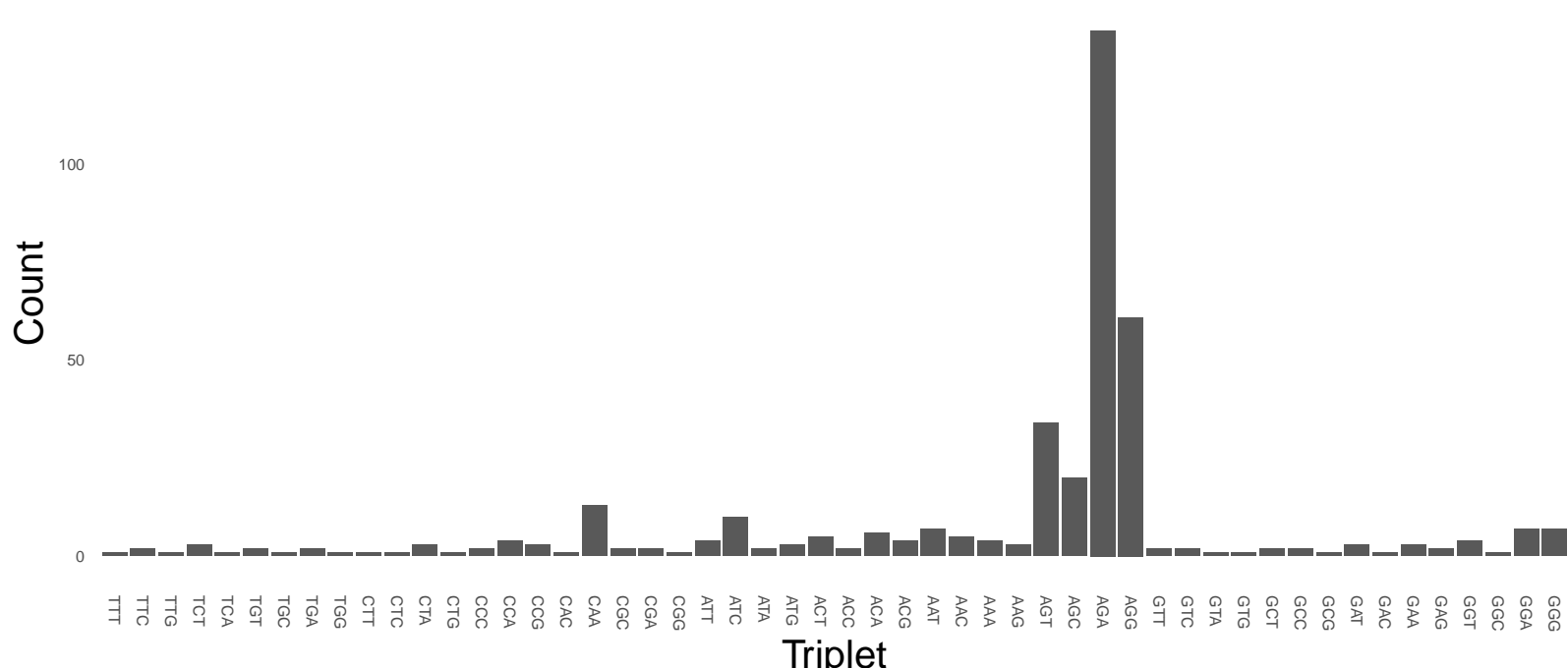
IGHV1-24*01_A315G_C317G- Final 3 nucleotides as a triplet



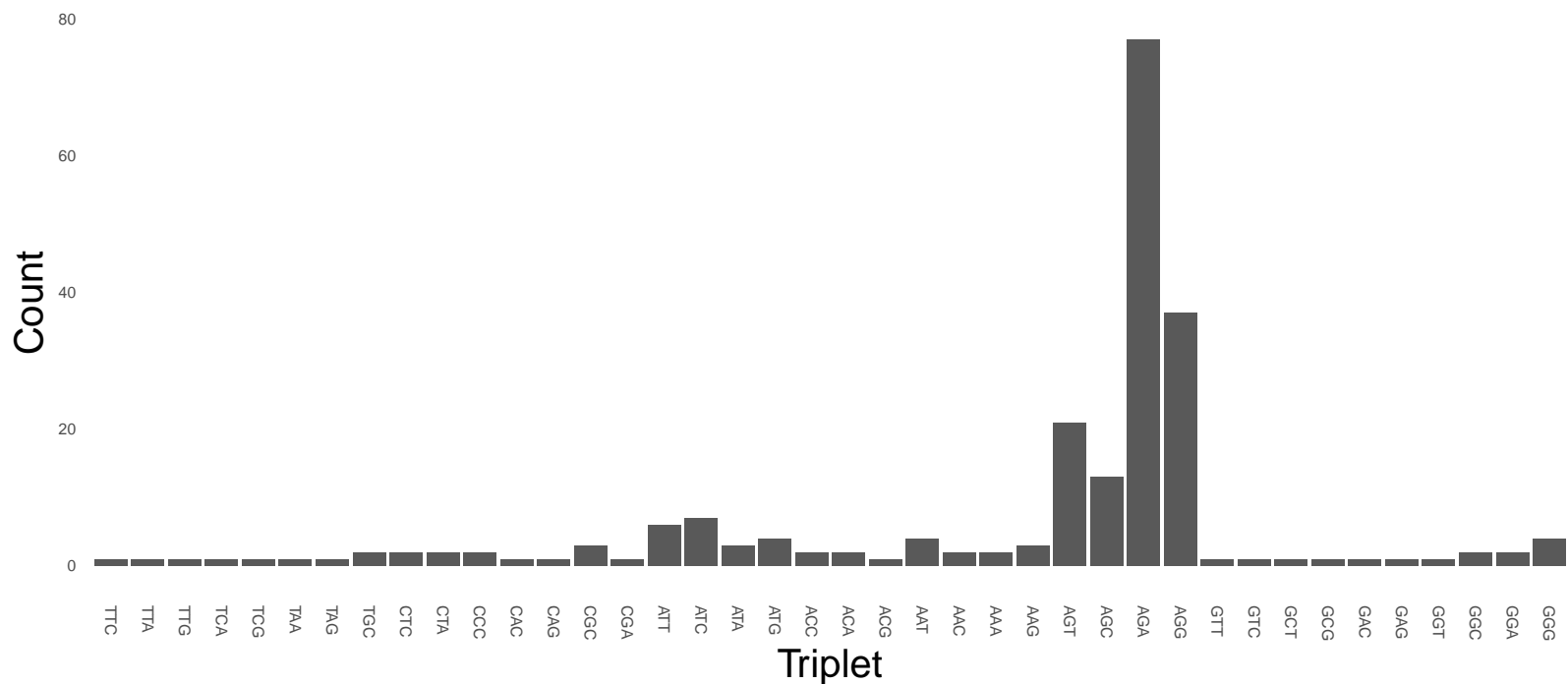
IGHV1-45*02_A297G_A301G_A315G- Final 3 nucleotides as a triplet



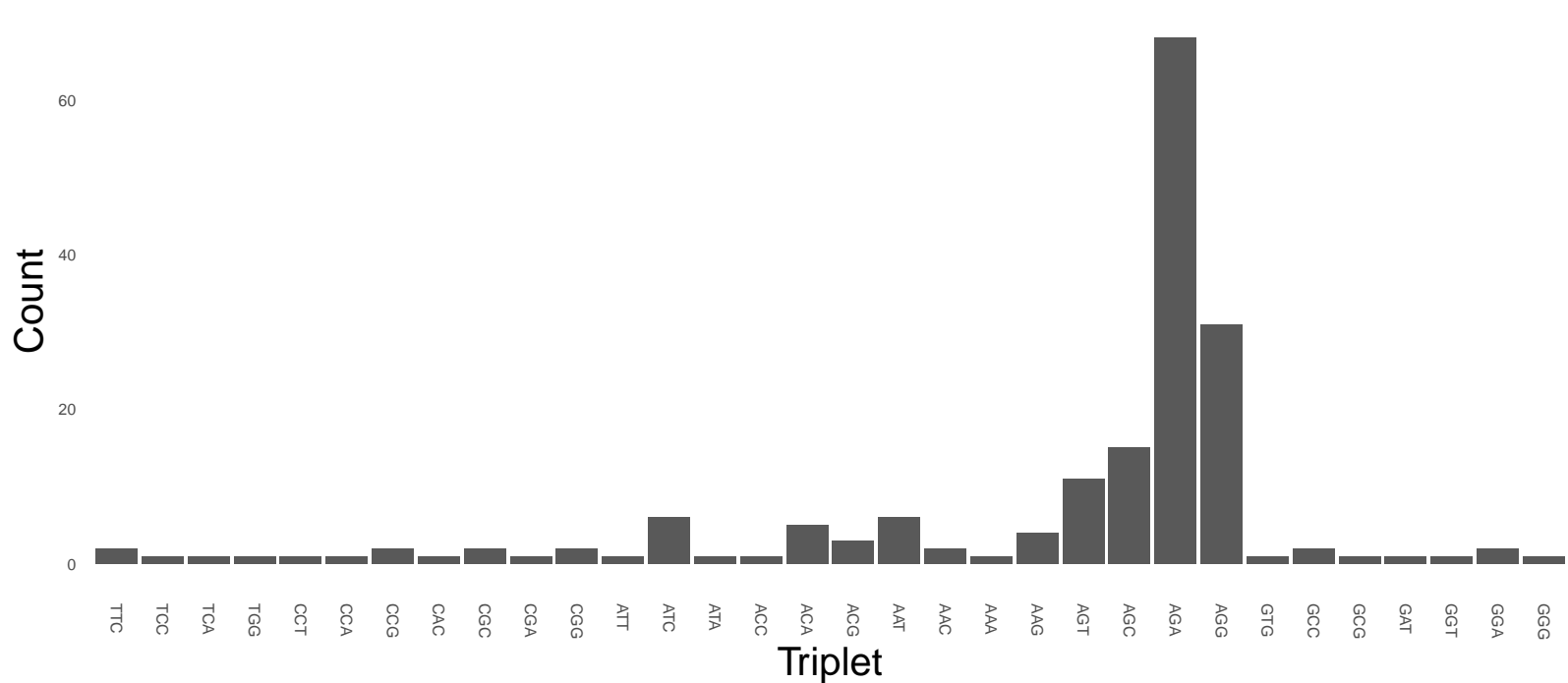
IGHV1-58*01_G316A_C317G- Final 3 nucleotides as a triplet



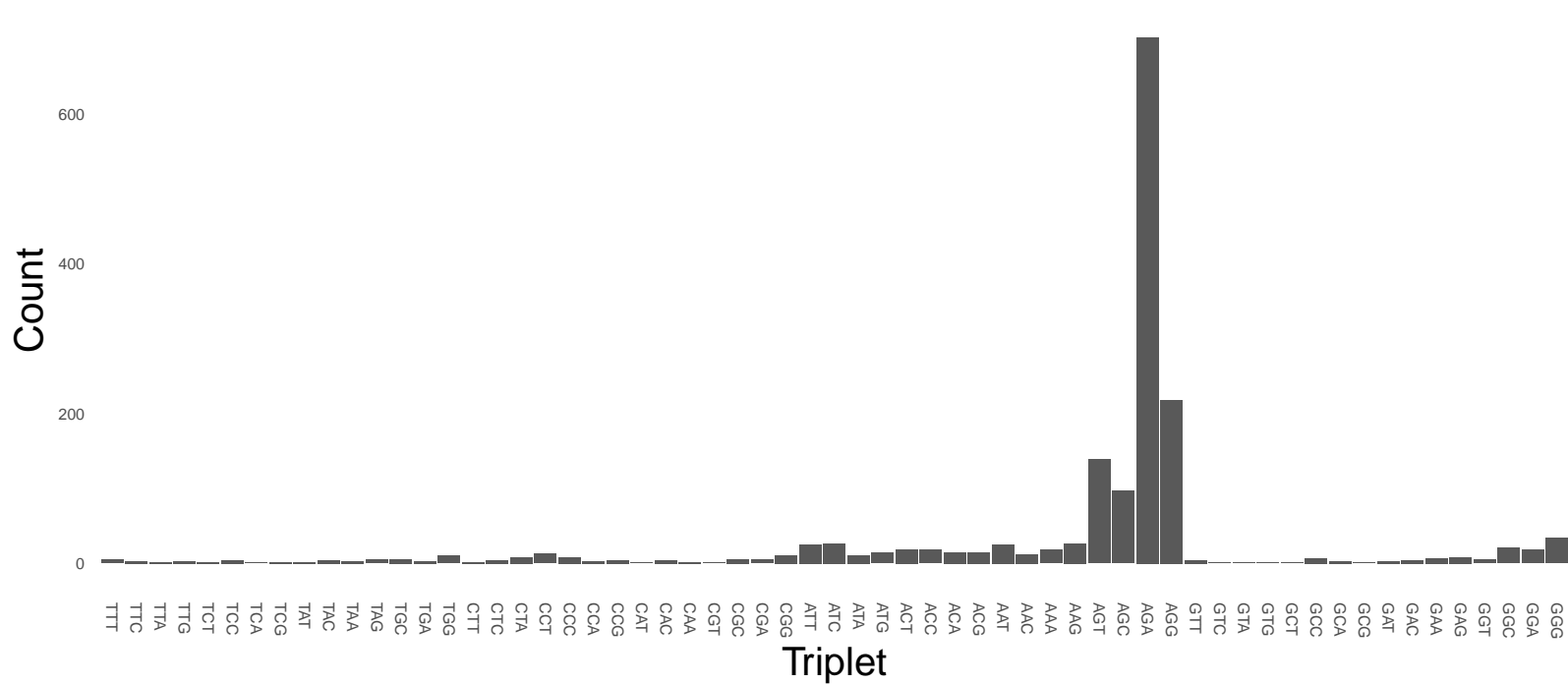
IGHV1-58*02_G316A_C317G- Final 3 nucleotides as a triplet



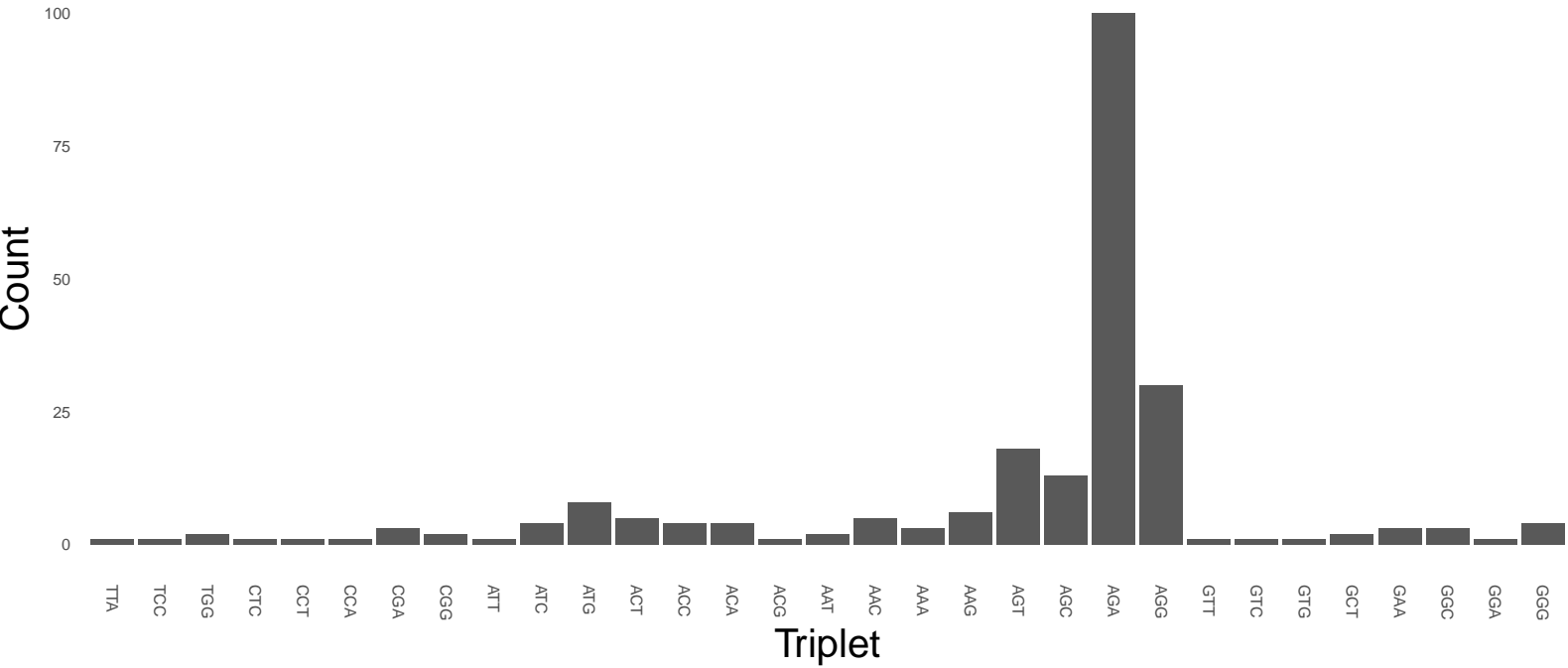
IGHV1-69-2*01_A315G_C317G- Final 3 nucleotides as a triplet



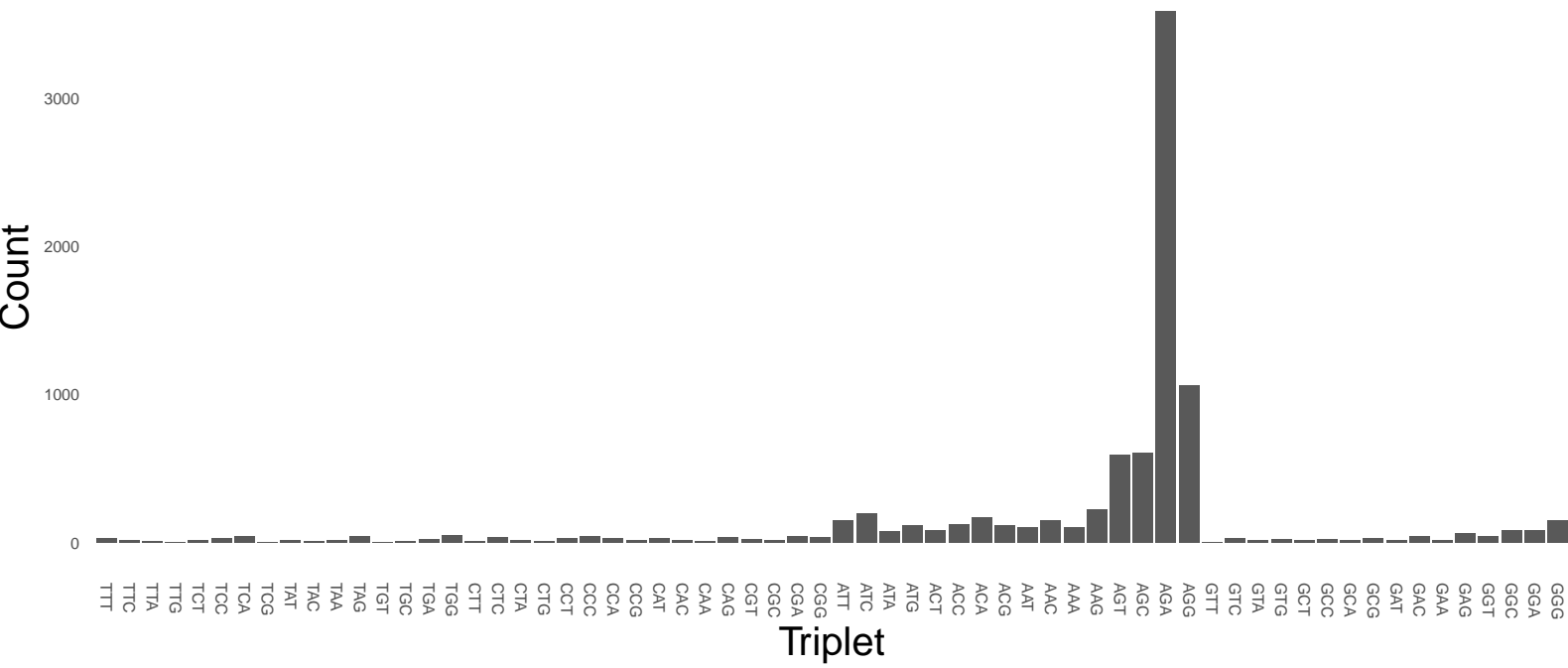
IGHV3-11*04_G240A- Final 3 nucleotides as a triplet



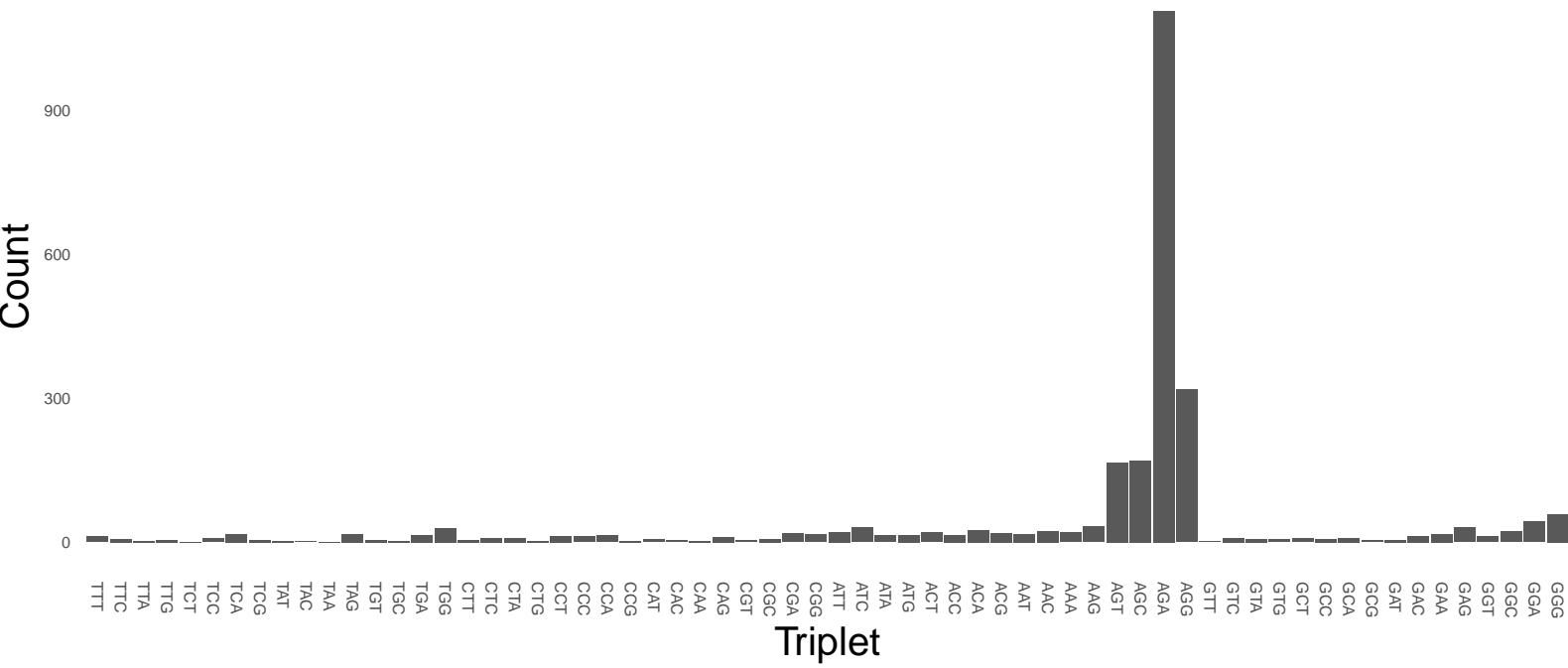
IGHV3-20*04_C258A_T279C_C300T_T301G- Final 3 nucleotides as a triplet



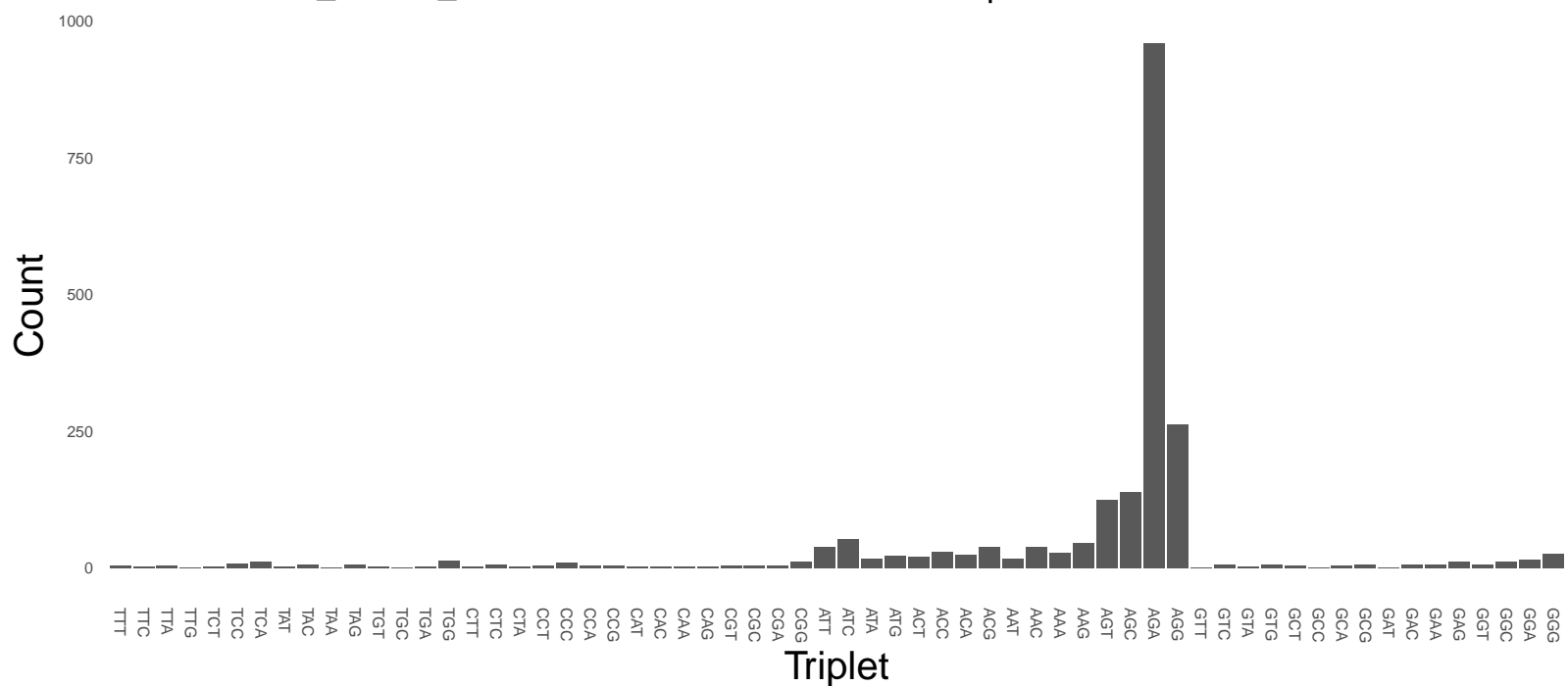
IGHV3-23*04_A39C- Final 3 nucleotides as a triplet



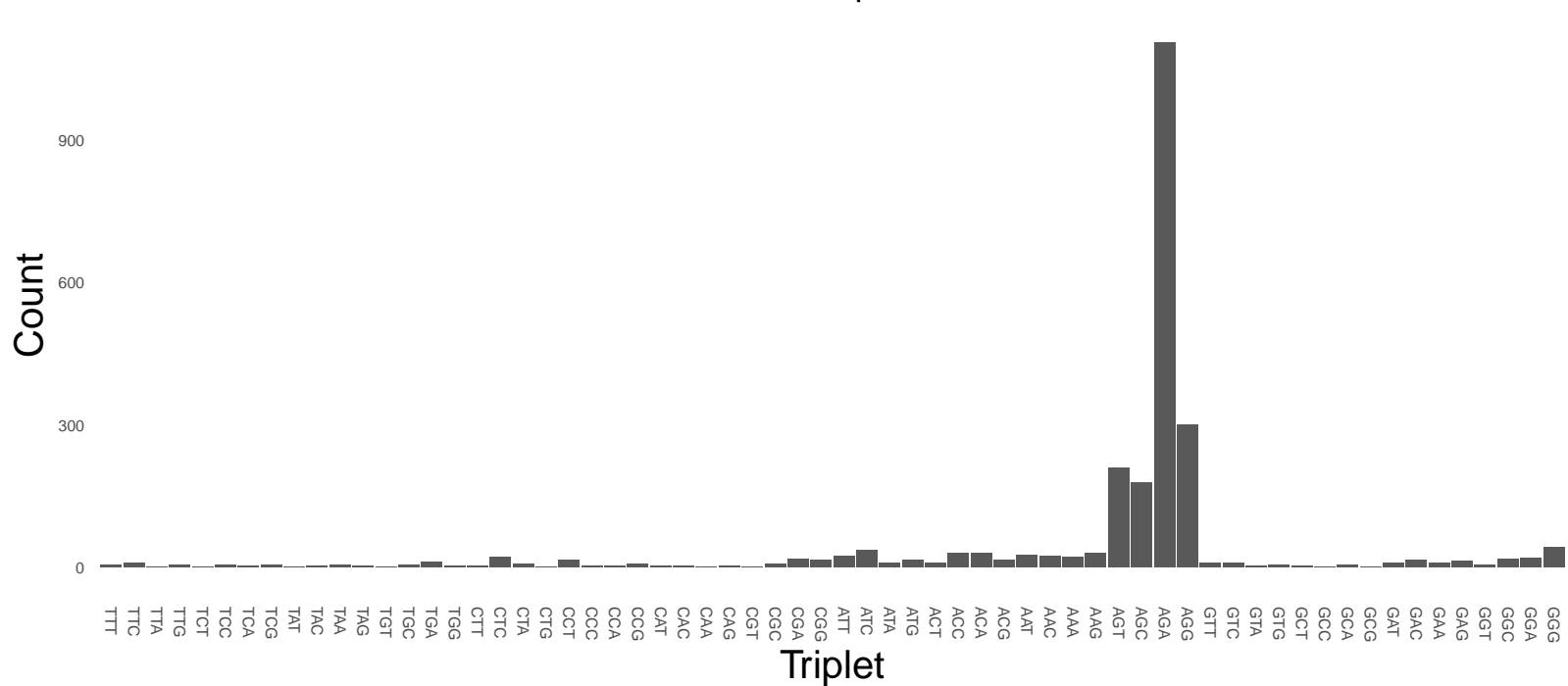
IGHV3-30*03_T288C- Final 3 nucleotides as a triplet



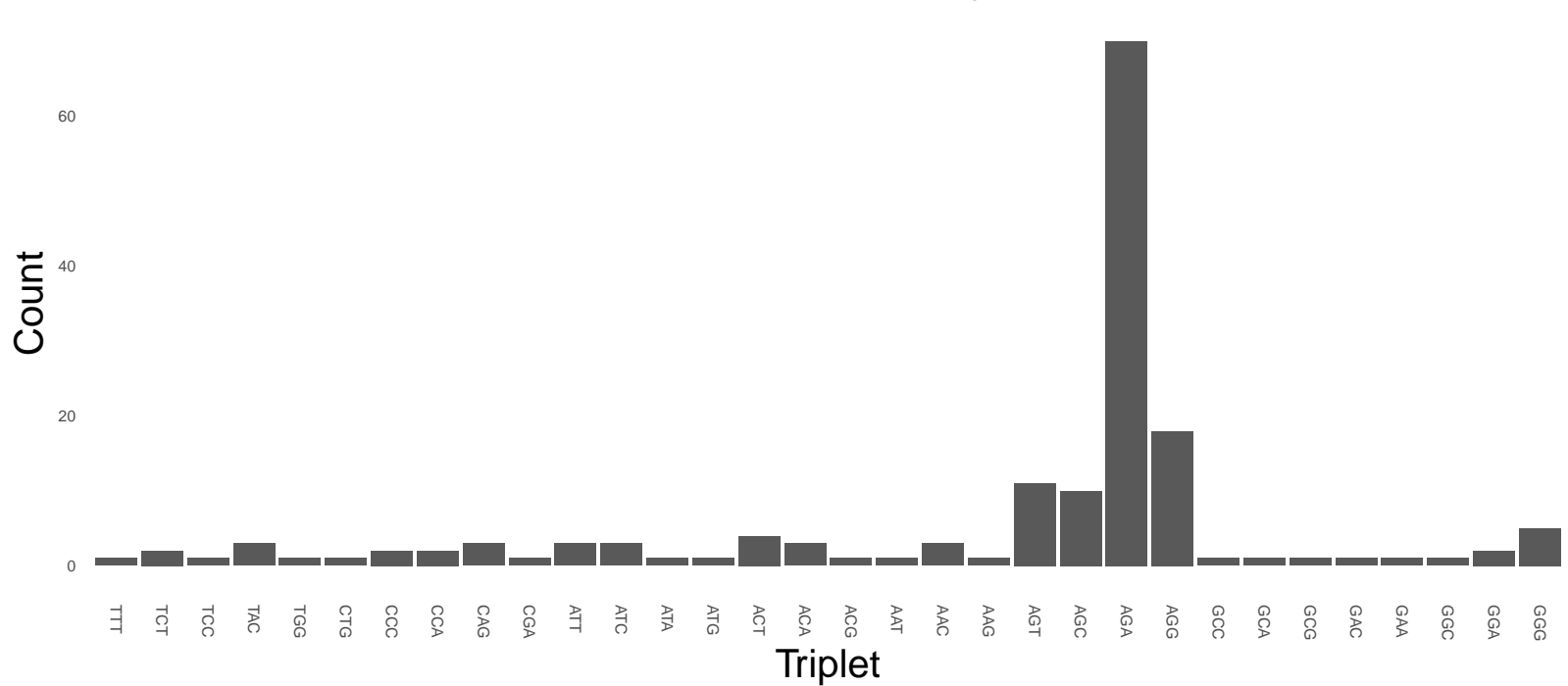
IGHV3-33*06_T300C_G303A- Final 3 nucleotides as a triplet



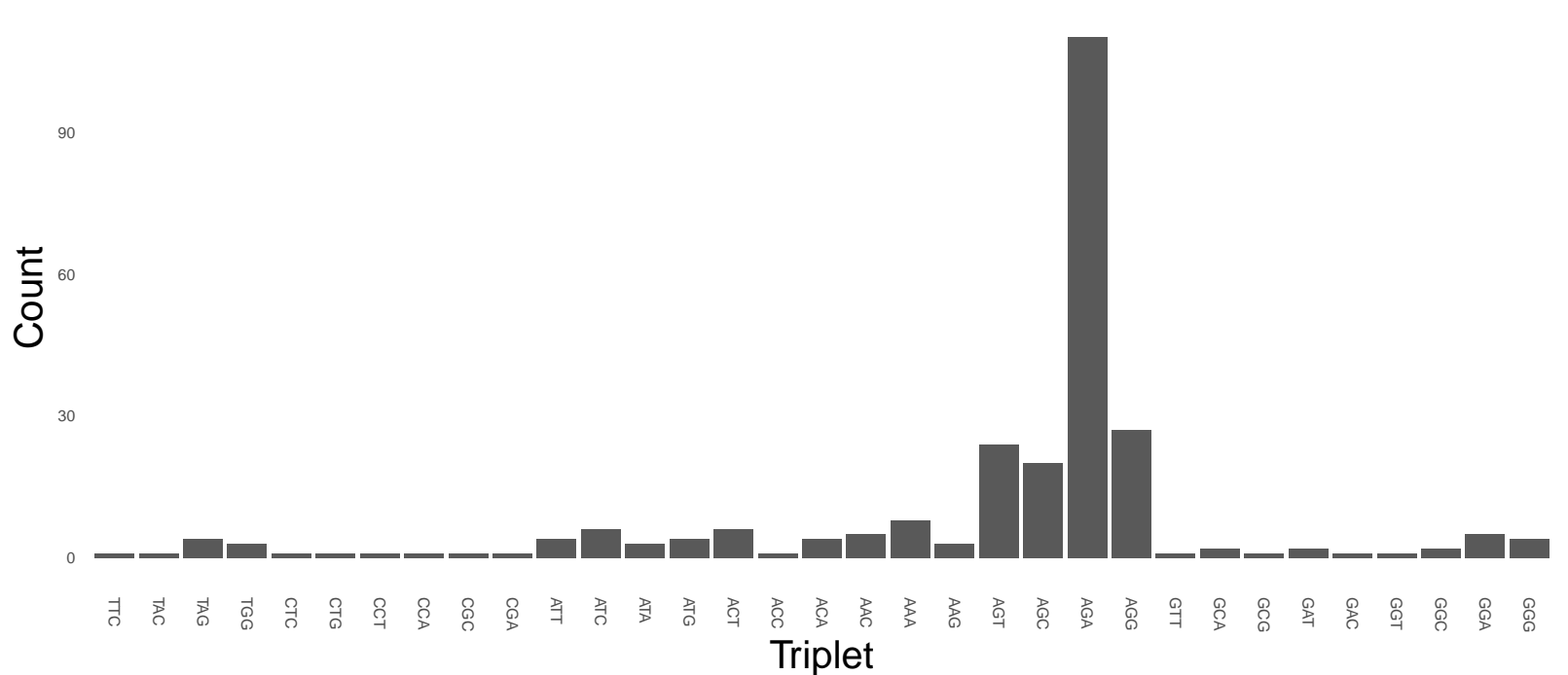
IGHV3-48*03_T303G- Final 3 nucleotides as a triplet



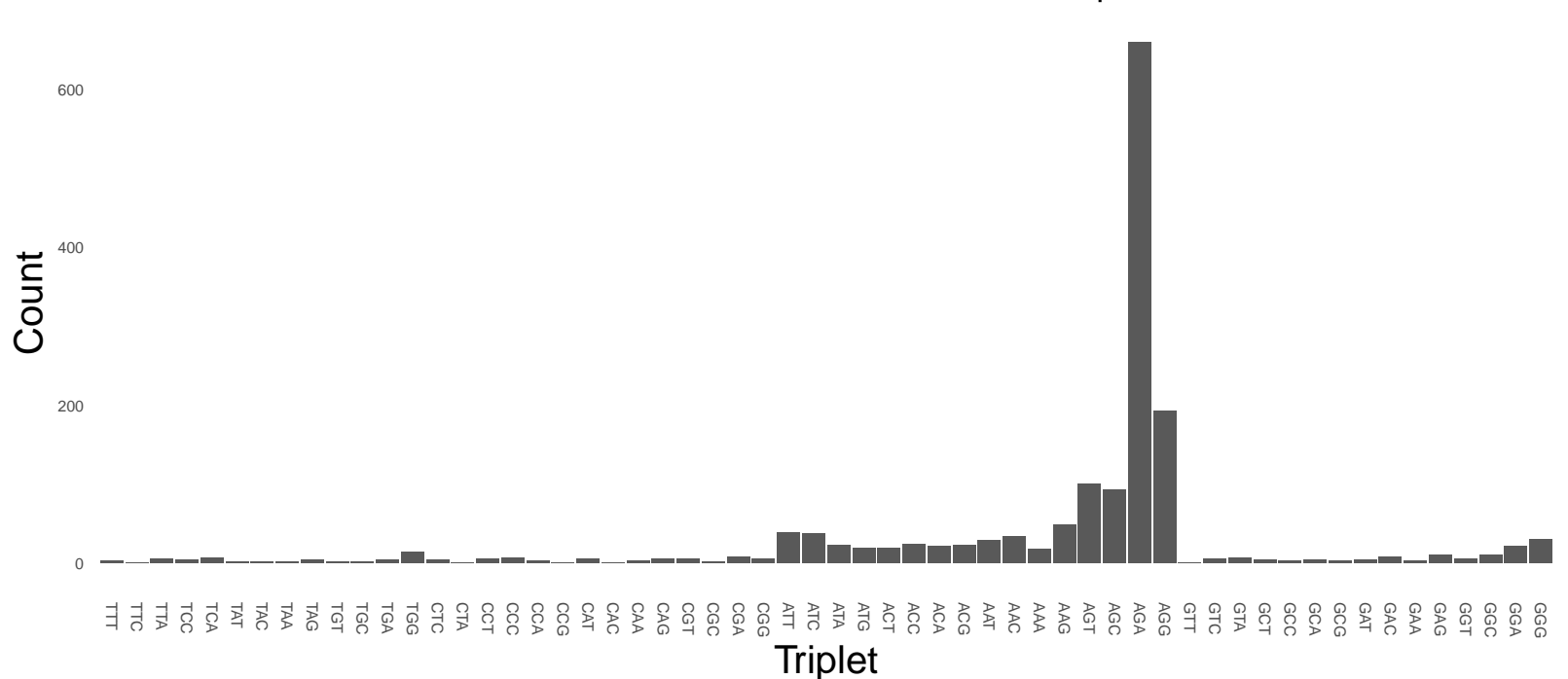
IGHV3-49*03_A313G_T315G- Final 3 nucleotides as a triplet



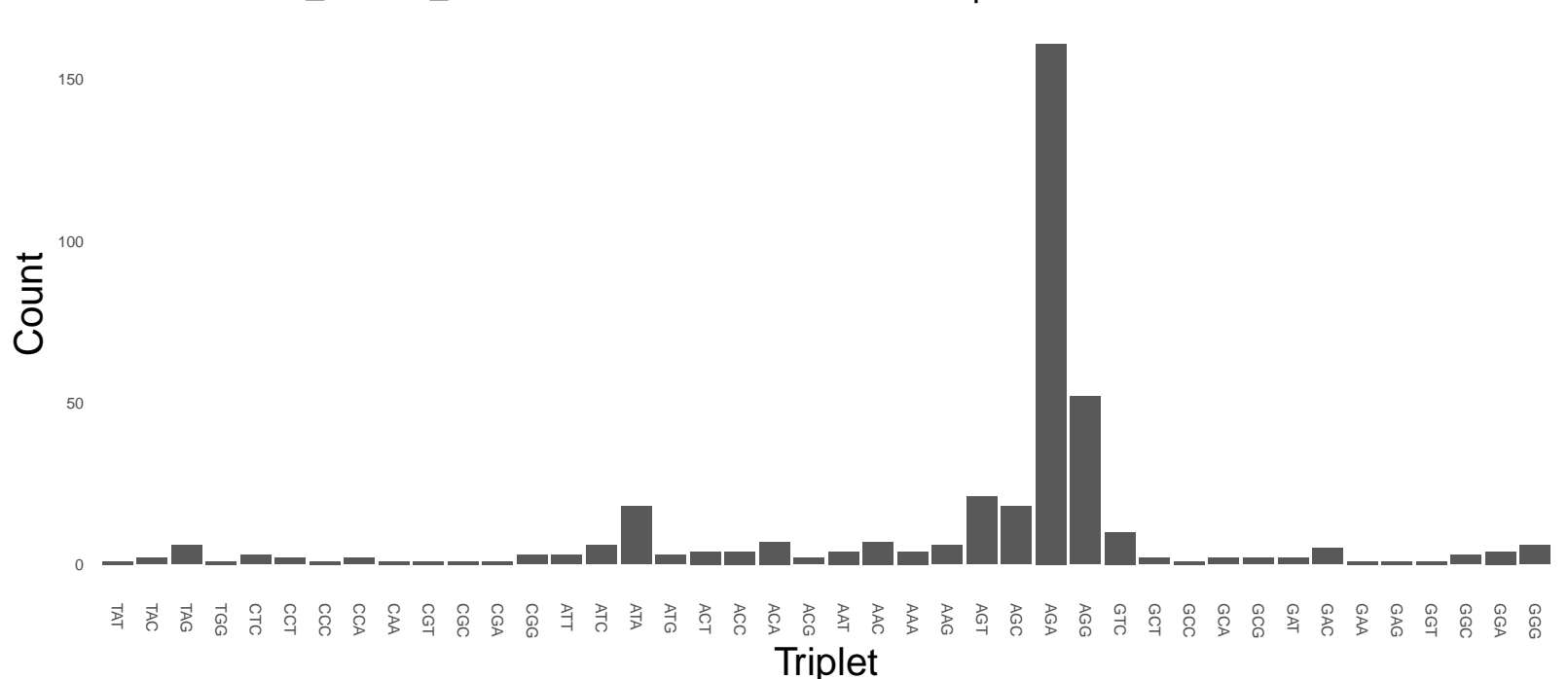
IGHV3-49*04_A313G_T315G- Final 3 nucleotides as a triplet



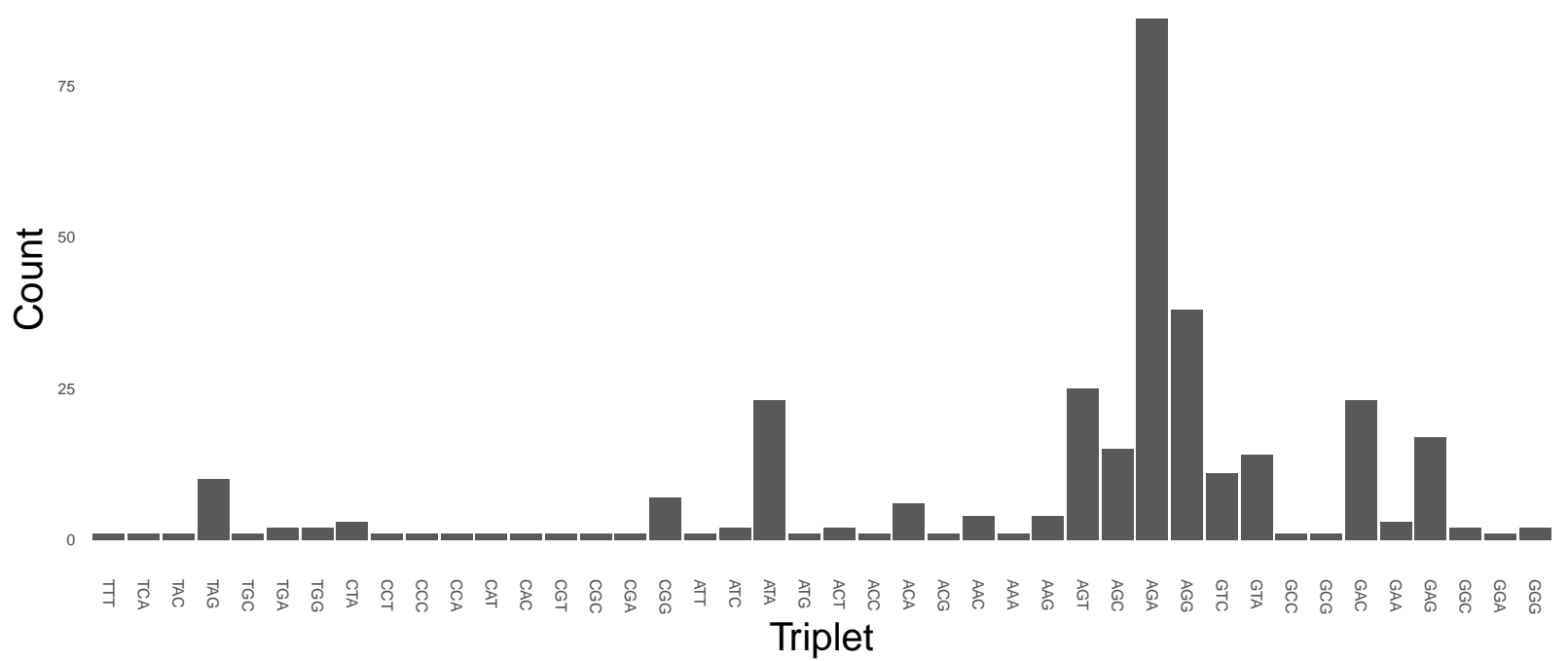
IGHV3-53*01_T267G_G303A_G317A- Final 3 nucleotides as a triplet



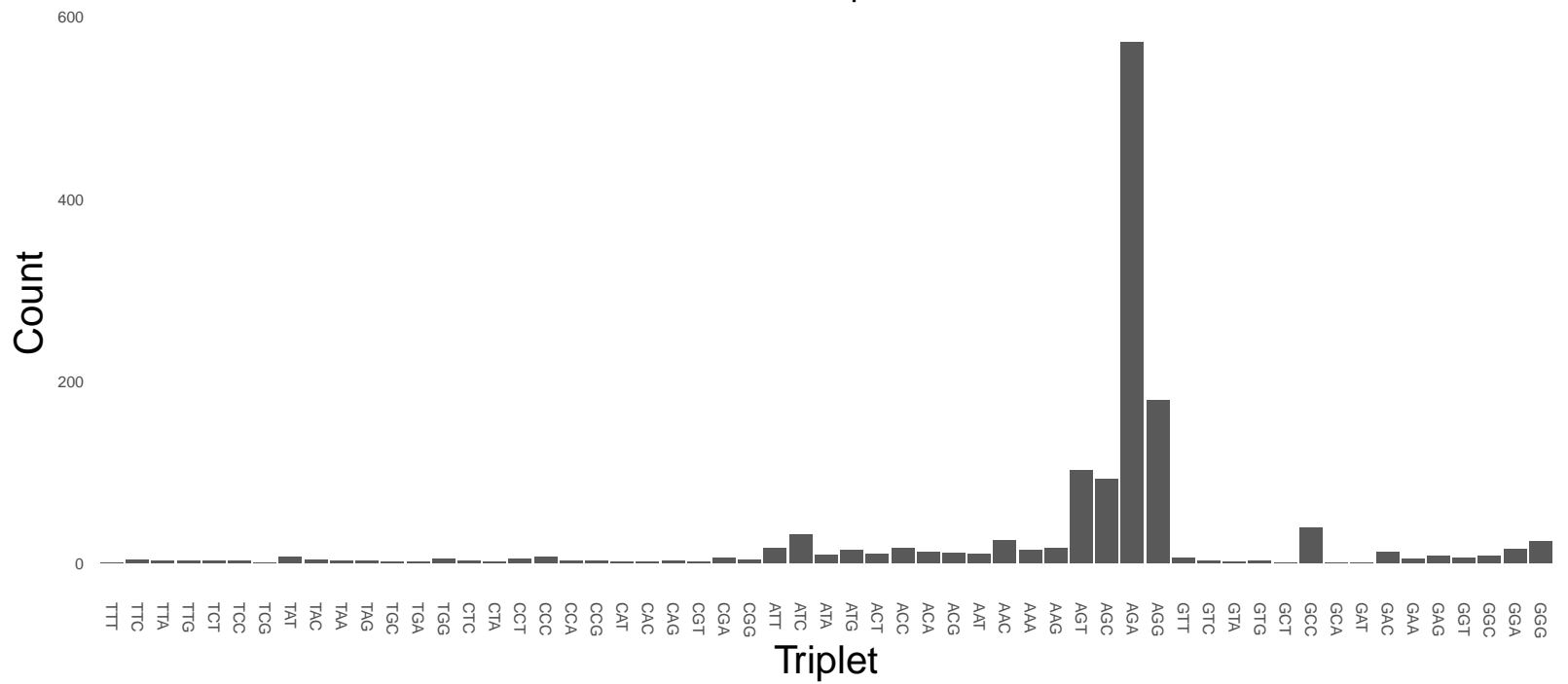
IGHV3-73*01_A313G_T315G- Final 3 nucleotides as a triplet



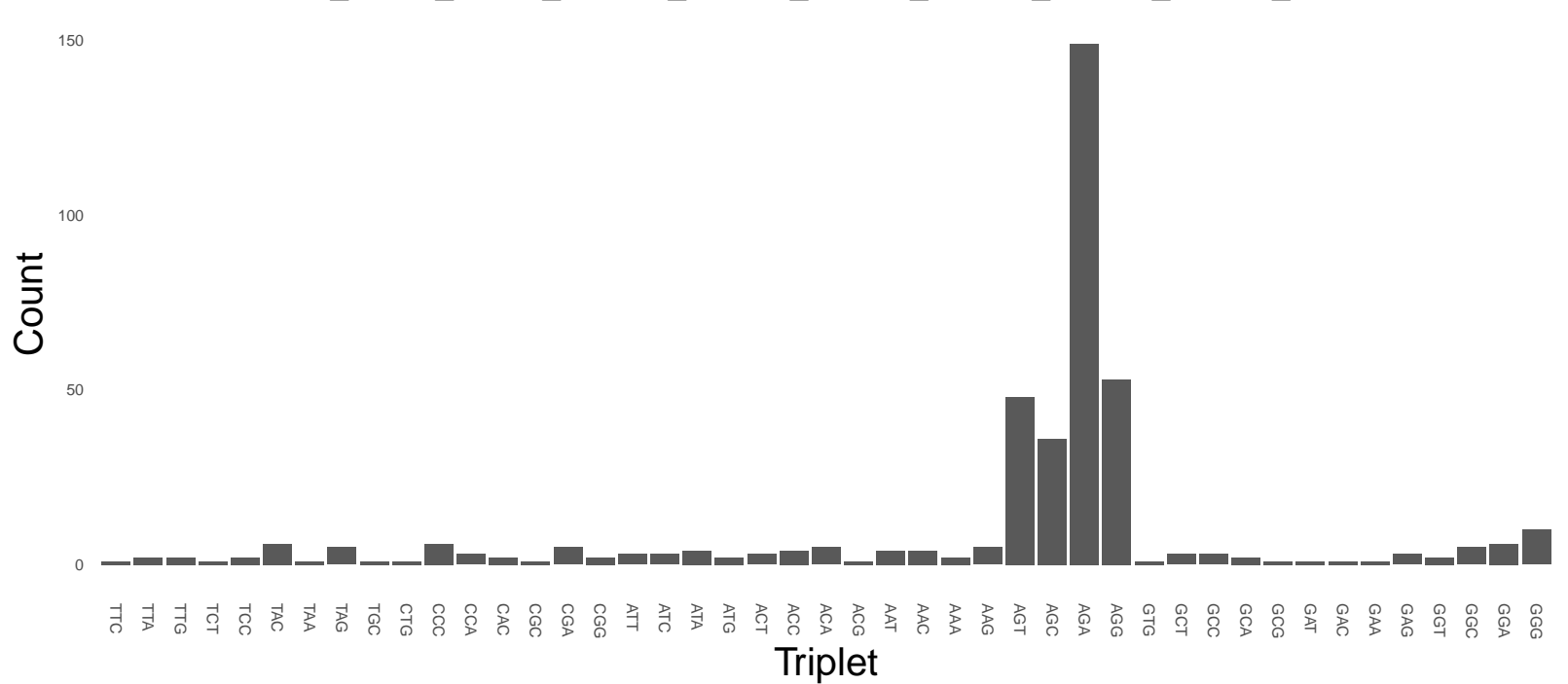
IGHV3-73*02_A313G-T315G- Final 3 nucleotides as a triplet



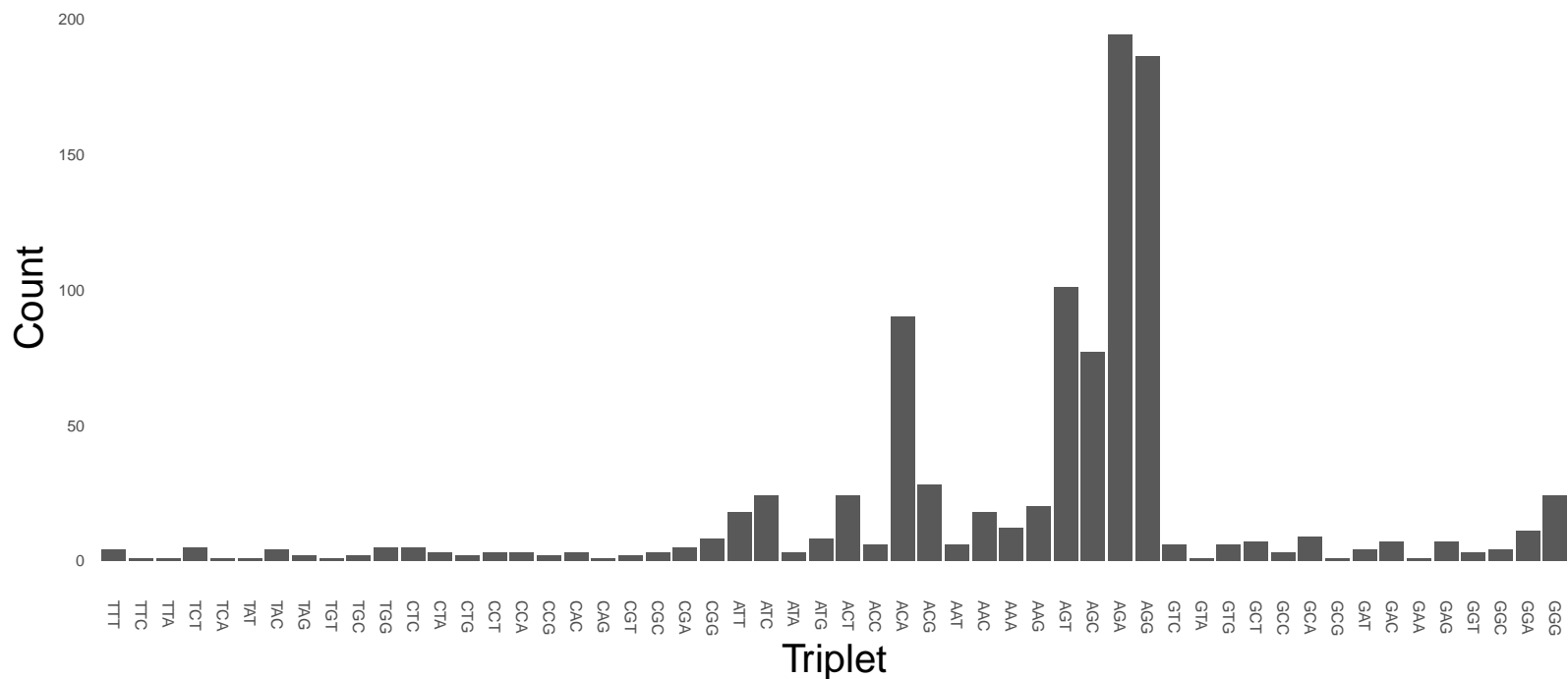
IGHV3-74*01_A315G- Final 3 nucleotides as a triplet



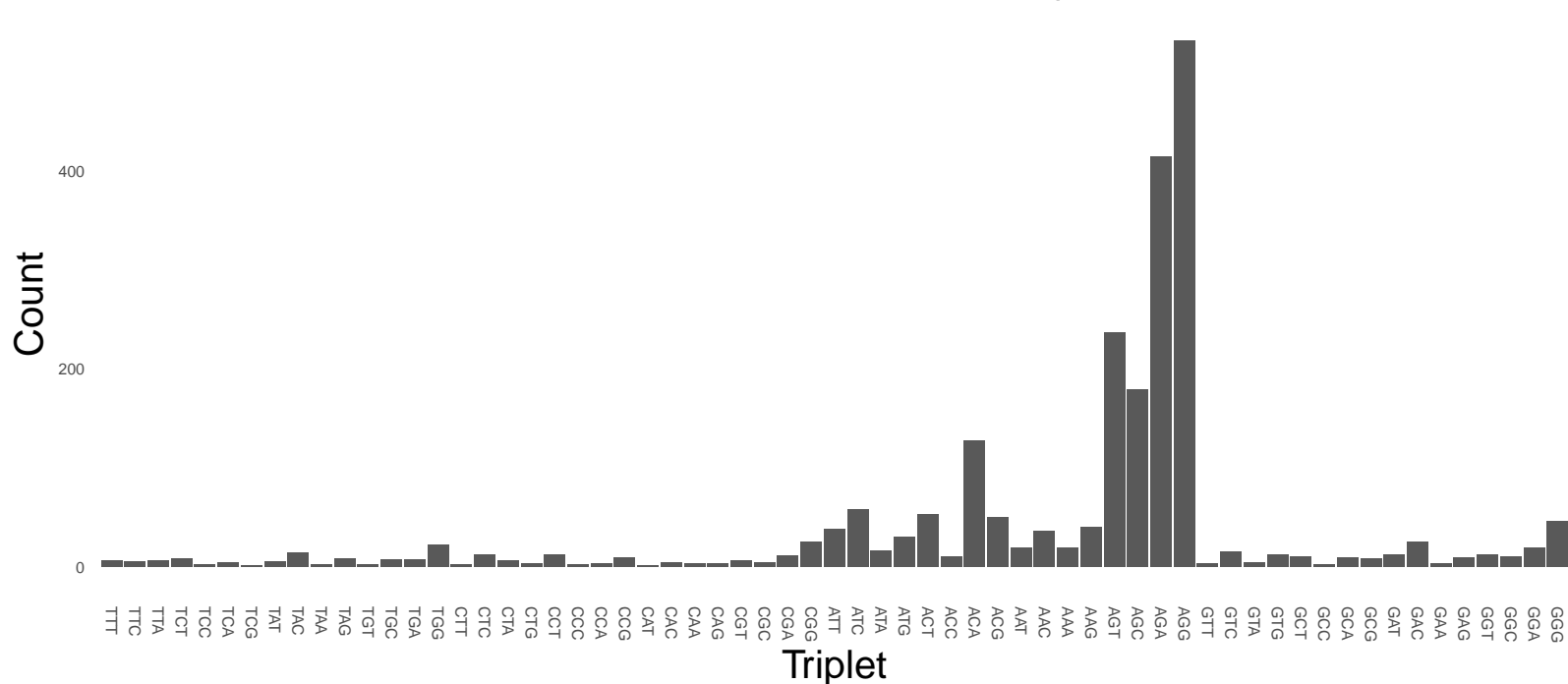
IGHV3-NL1*01_G49A_G75C_C159G_T160G_T201C_G267T_T288C_T300C_A317G- Final 3 nucleotides as a triplet



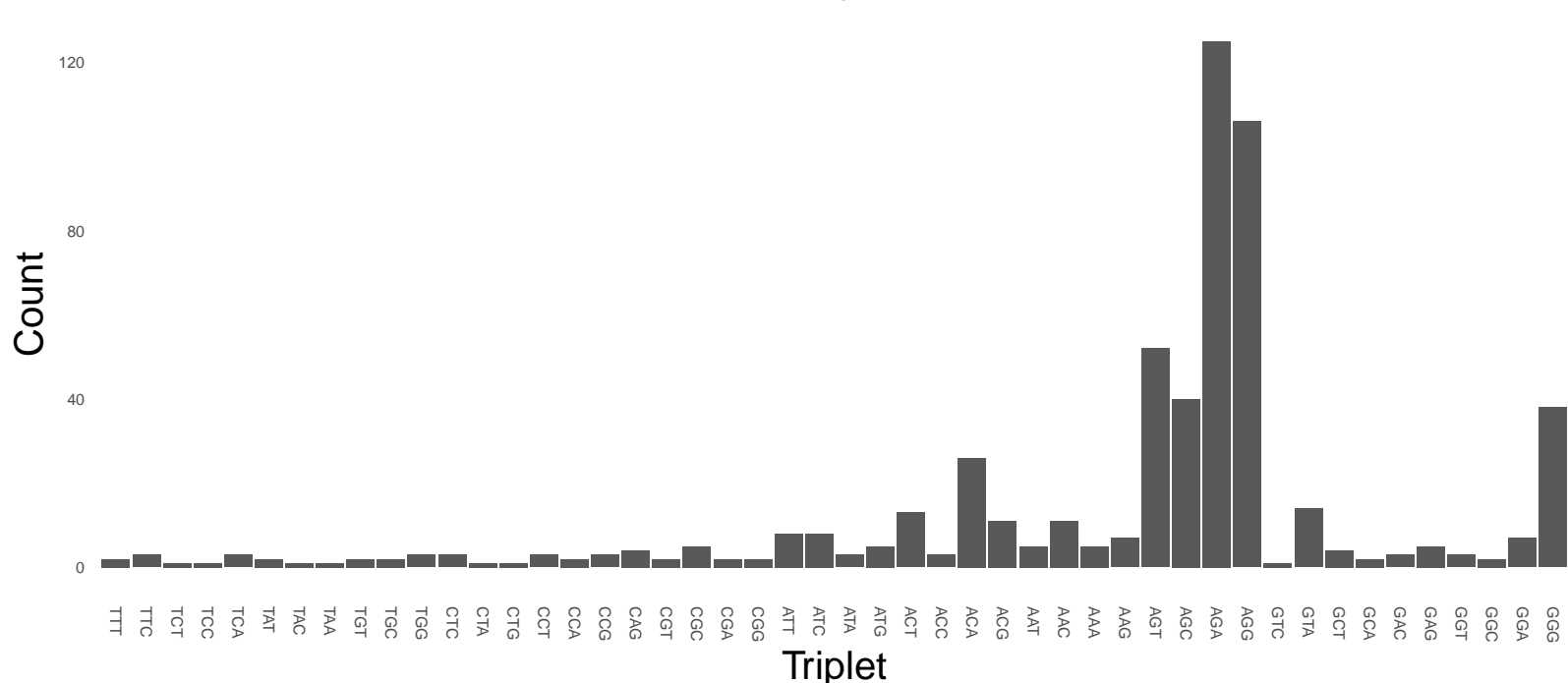
IGHV4-61*01_G4C_G88A_G103A- Final 3 nucleotides as a triplet



IGHV4-61*08_G48A_G49C_G88A- Final 3 nucleotides as a triplet

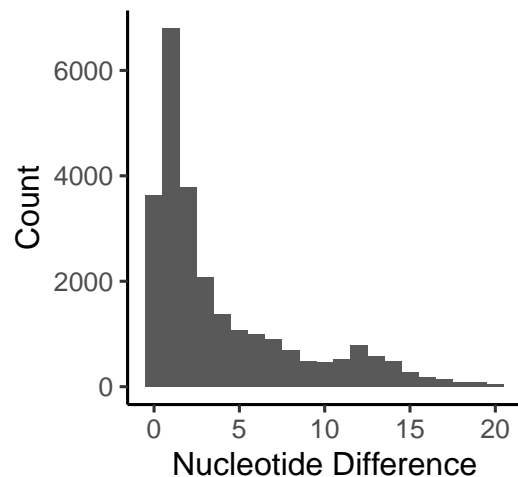


IGHV6-1*01_A315G- Final 3 nucleotides as a triplet



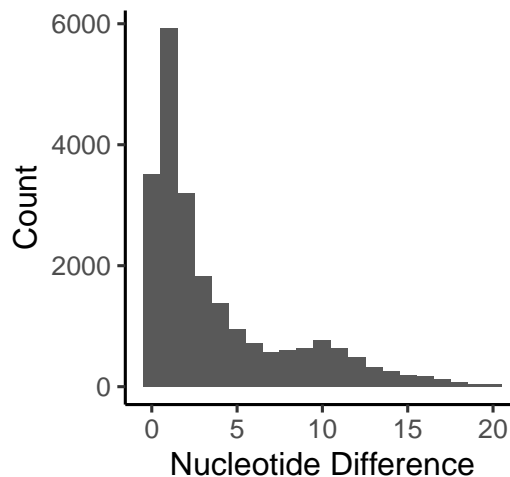
IGHV1-2*02

25741 sequences assigned
3639 (14.1%) exact matches, in which:
2988 unique CDR3
7 unique J



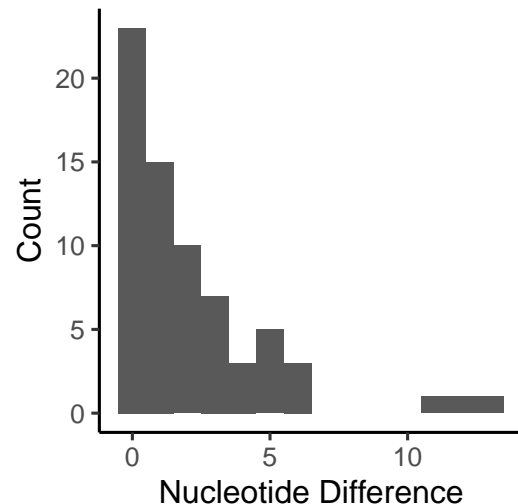
IGHV1-18*01

22647 sequences assigned
3508 (15.5%) exact matches, in which:
2889 unique CDR3
7 unique J



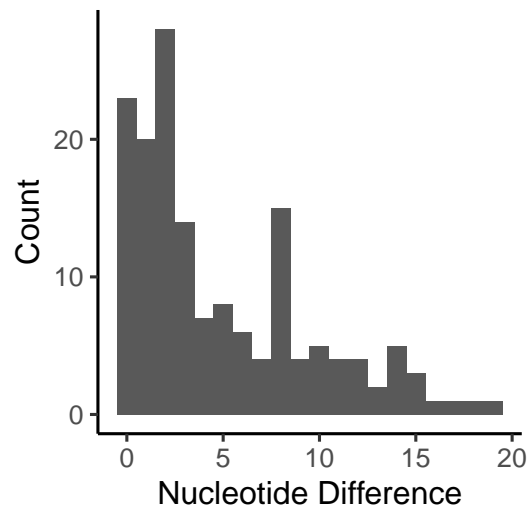
IGHV1-45*02

70 sequences assigned
23 (32.9%) exact matches, in which:
22 unique CDR3
5 unique J



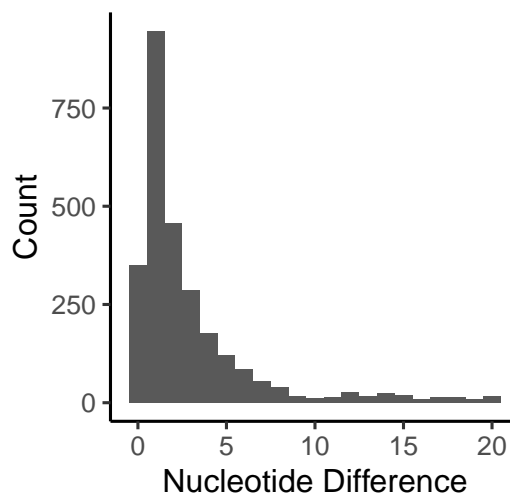
IGHV1-3*02

161 sequences assigned
23 (14.3%) exact matches, in which:
22 unique CDR3
6 unique J



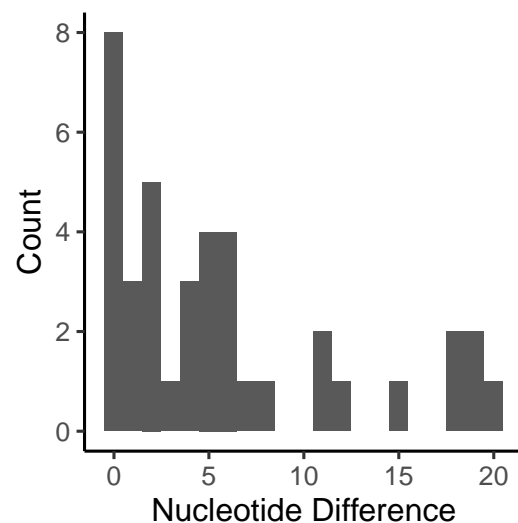
IGHV1-24*01

2838 sequences assigned
350 (12.3%) exact matches, in which:
255 unique CDR3
7 unique J



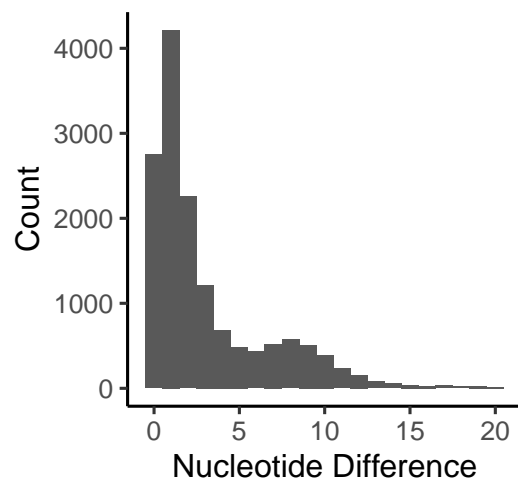
IGHV1-45*02_A297G_A300G

40 sequences assigned
8 (20%) exact matches, in which:
8 unique CDR3
3 unique J



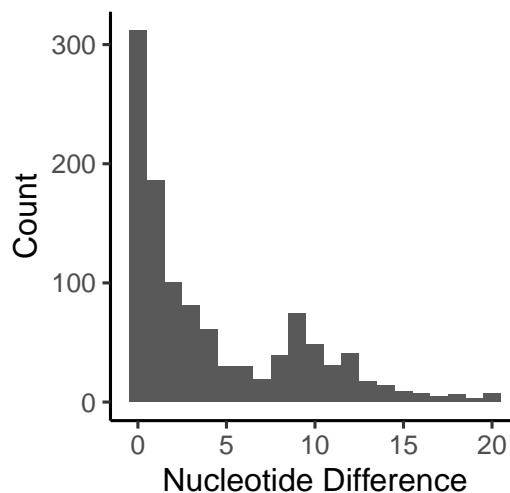
IGHV1-8*01

14798 sequences assigned
2750 (18.6%) exact matches, in which:
2353 unique CDR3
7 unique J



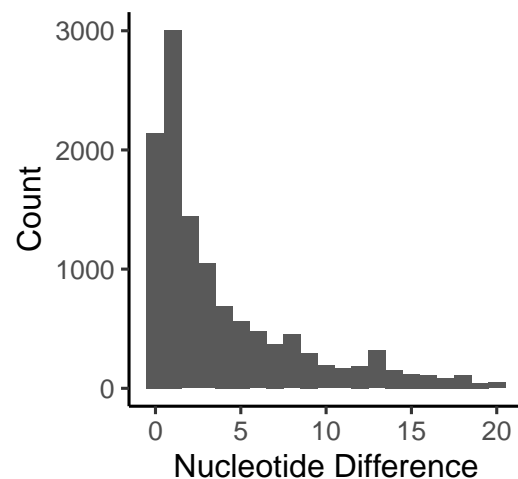
IGHV1-24*01_A315G_C316G

1157 sequences assigned
312 (27%) exact matches, in which:
310 unique CDR3
7 unique J



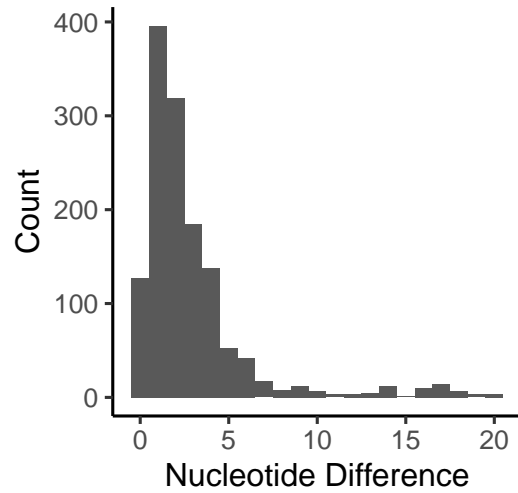
IGHV1-46*01

12214 sequences assigned
2141 (17.5%) exact matches, in which:
1821 unique CDR3
7 unique J



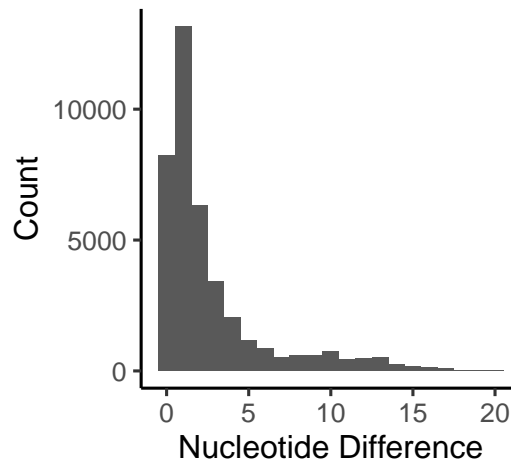
IGHV1-58*01

1381 sequences assigned
127 (9.2%) exact matches, in which:
81 unique CDR3
7 unique J



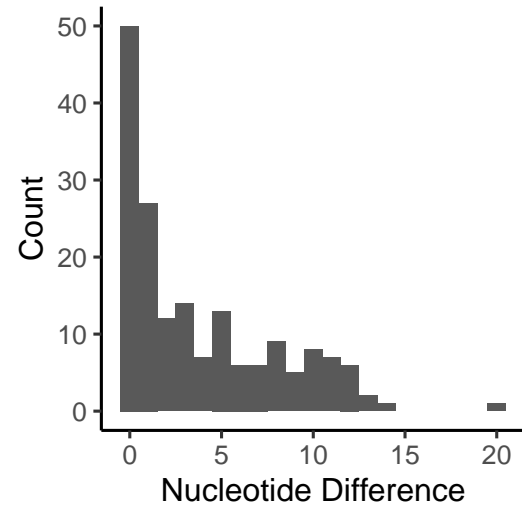
IGHV1-69*01

40158 sequences assigned
8219 (20.5%) exact matches, in which:
6603 unique CDR3
7 unique J



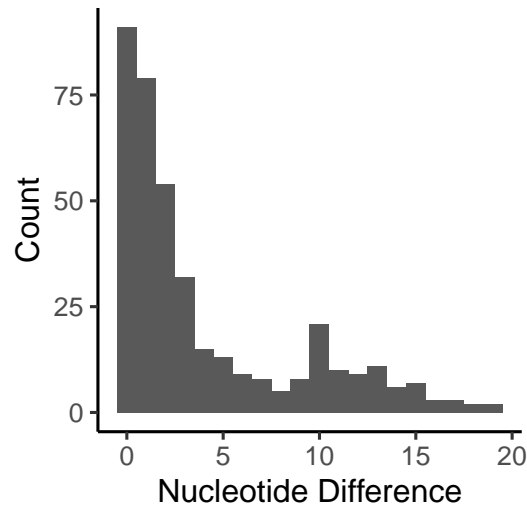
IGHV1-69-2*01_A315G_0

179 sequences assigned
50 (27.9%) exact matches, in which:
50 unique CDR3
7 unique J



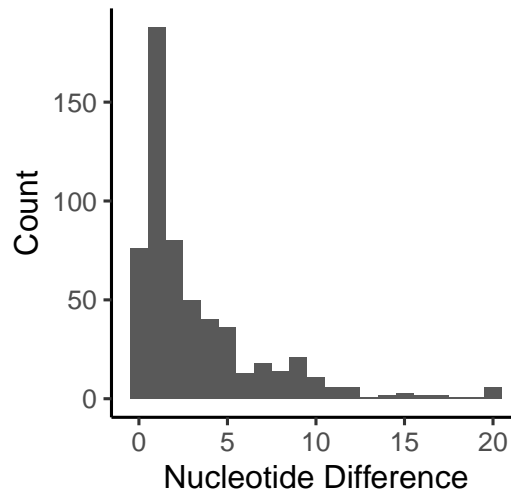
IGHV1-58*01_G316A_C3

391 sequences assigned
91 (23.3%) exact matches, in which:
90 unique CDR3
7 unique J



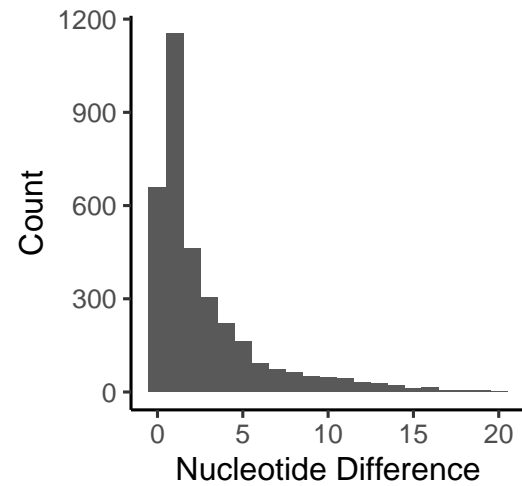
IGHV1-69-2*01

602 sequences assigned
76 (12.6%) exact matches, in which:
52 unique CDR3
5 unique J



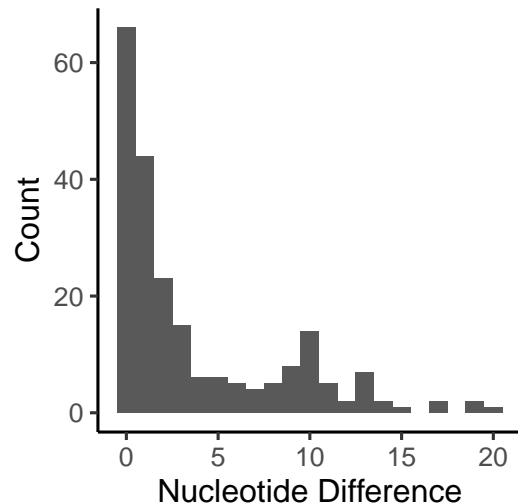
IGHV2-5*01

3491 sequences assigned
657 (18.8%) exact matches, in which:
534 unique CDR3
7 unique J



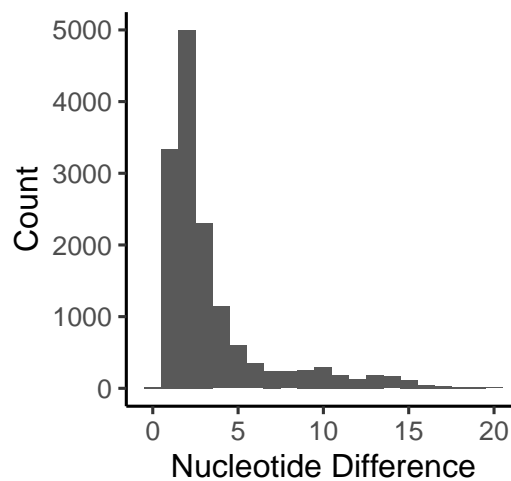
IGHV1-58*02_G316A_C3

220 sequences assigned
66 (30%) exact matches, in which:
66 unique CDR3
6 unique J



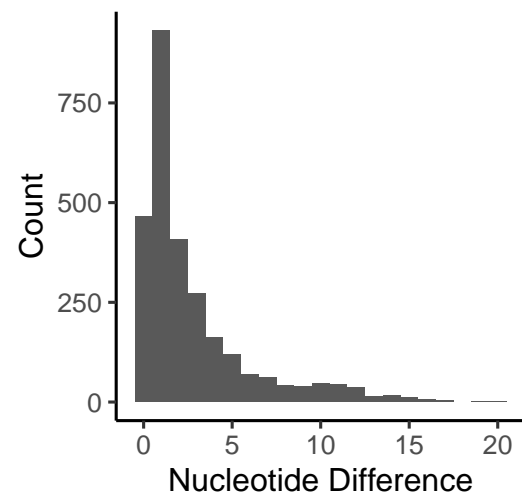
IGHV1-69*04

14803 sequences assigned
21 (0.1%) exact matches, in which:
21 unique CDR3
5 unique J



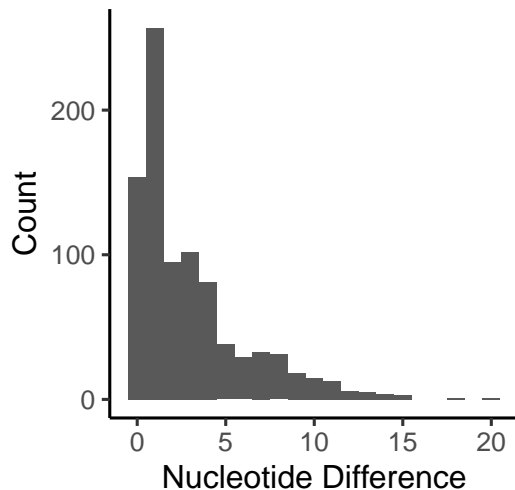
IGHV2-26*01

2861 sequences assigned
466 (16.3%) exact matches, in which:
377 unique CDR3
7 unique J



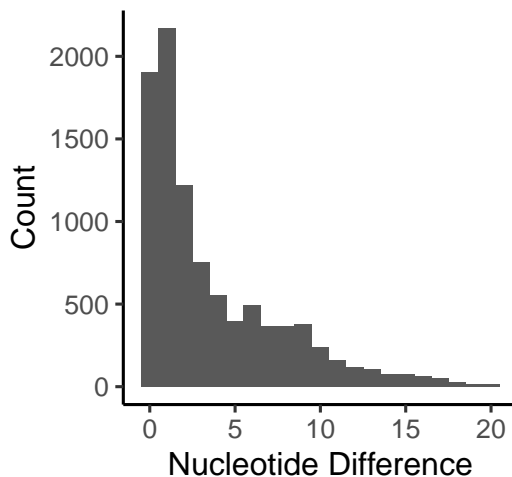
IGHV2-70*01

918 sequences assigned
154 (16.8%) exact matches, in which:
127 unique CDR3
6 unique J



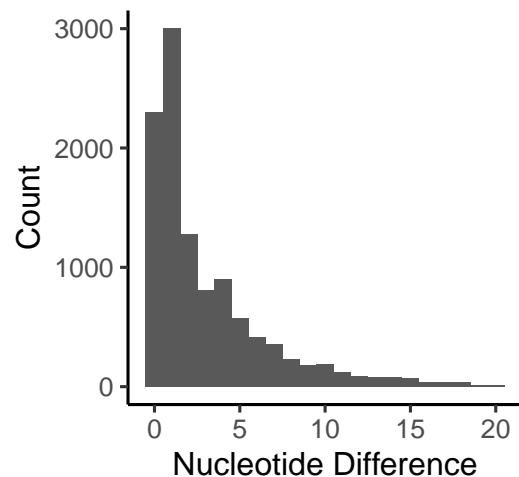
IGHV3-7*01

9712 sequences assigned
1906 (19.6%) exact matches, in which:
1604 unique CDR3
7 unique J



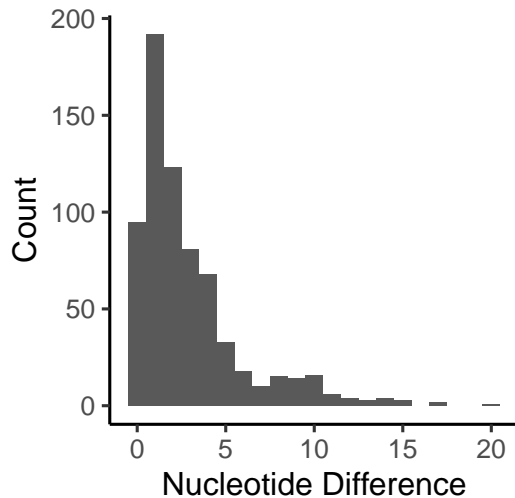
IGHV3-11*01

11060 sequences assigned
2298 (20.8%) exact matches, in which:
1850 unique CDR3
7 unique J



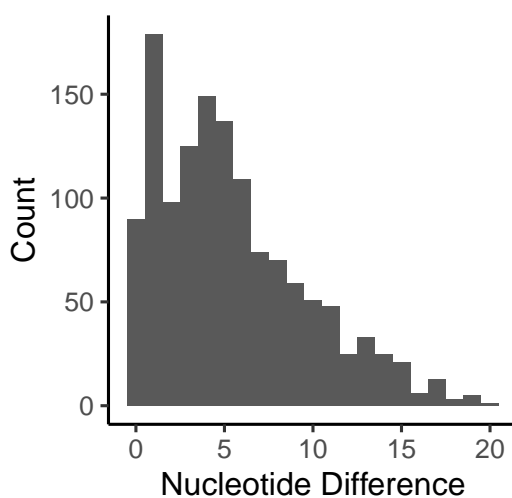
IGHV2-70*04

713 sequences assigned
95 (13.3%) exact matches, in which:
78 unique CDR3
6 unique J



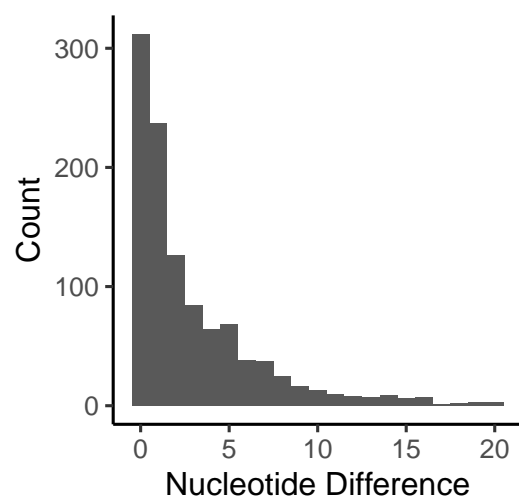
IGHV3-7*03

1339 sequences assigned
90 (6.7%) exact matches, in which:
89 unique CDR3
6 unique J



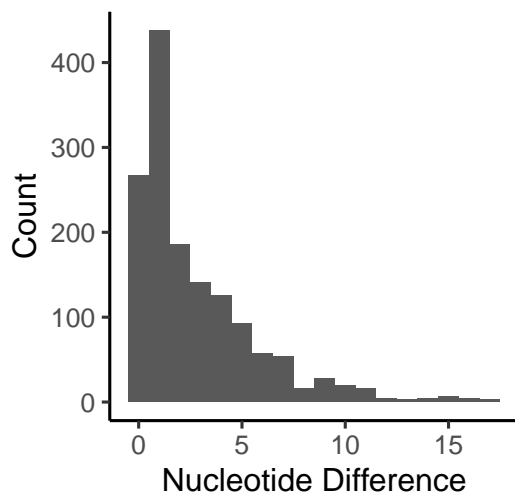
IGHV3-11*04

1085 sequences assigned
312 (28.8%) exact matches, in which:
308 unique CDR3
7 unique J



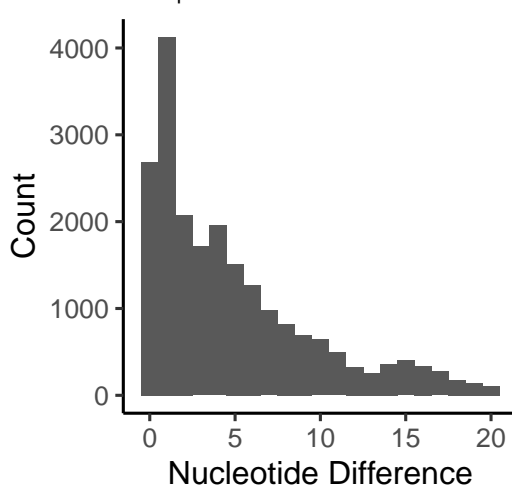
IGHV2-70*15

1515 sequences assigned
267 (17.6%) exact matches, in which:
216 unique CDR3
7 unique J



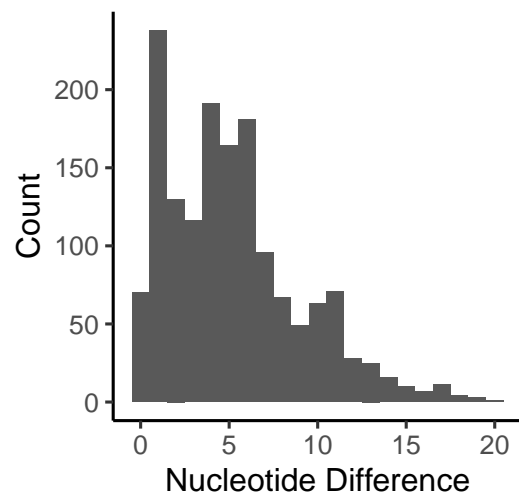
IGHV3-9*01

21727 sequences assigned
2686 (12.4%) exact matches, in which:
2138 unique CDR3
7 unique J



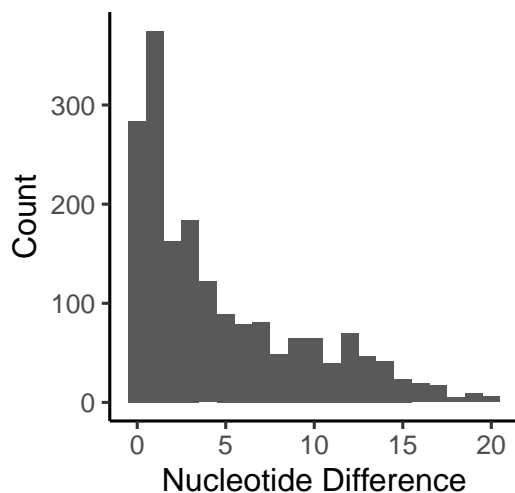
IGHV3-11*04_G240A

1628 sequences assigned
70 (4.3%) exact matches, in which:
70 unique CDR3
7 unique J



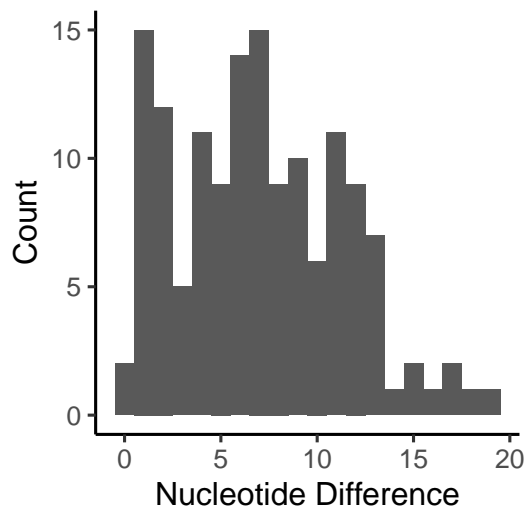
IGHV3-13*01

1851 sequences assigned
284 (15.3%) exact matches, in which:
223 unique CDR3
6 unique J



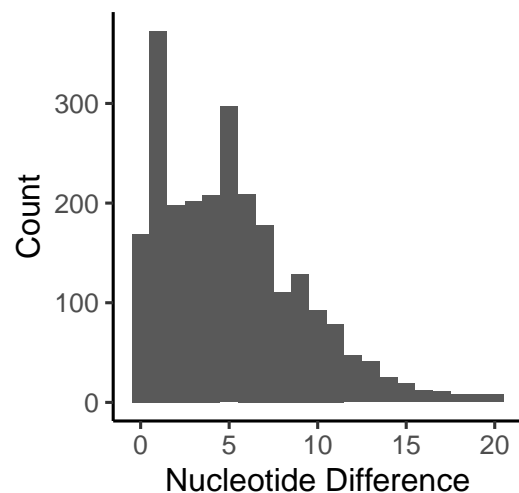
IGHV3-20*04

144 sequences assigned
2 (1.4%) exact matches, in which:
2 unique CDR3
2 unique J



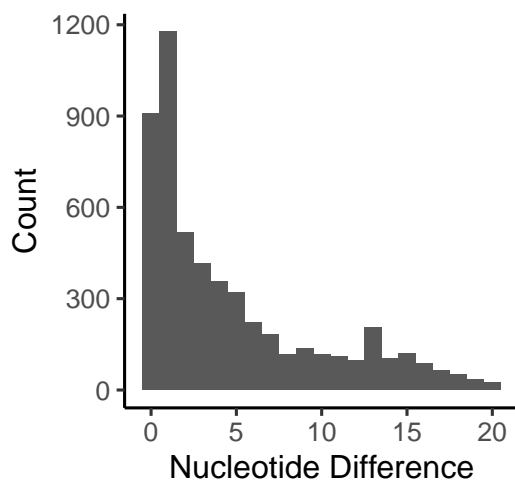
IGHV3-21*04

2453 sequences assigned
169 (6.9%) exact matches, in which:
168 unique CDR3
7 unique J



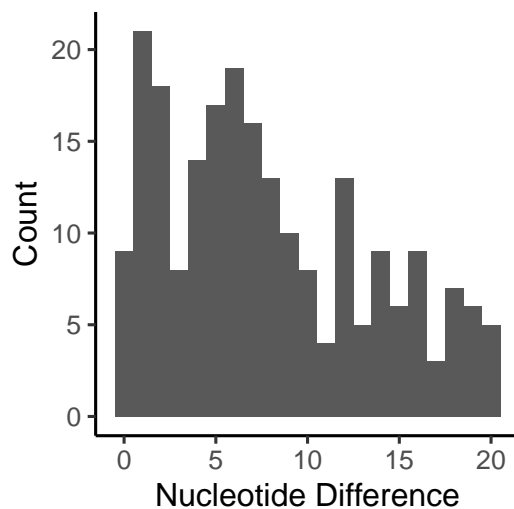
IGHV3-15*01

5526 sequences assigned
907 (16.4%) exact matches, in which:
732 unique CDR3
7 unique J



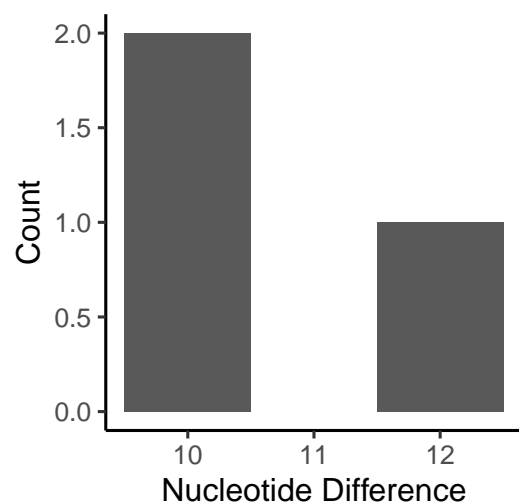
IGHV3-20*04_C258A_T27

232 sequences assigned
9 (3.9%) exact matches, in which:
9 unique CDR3
3 unique J



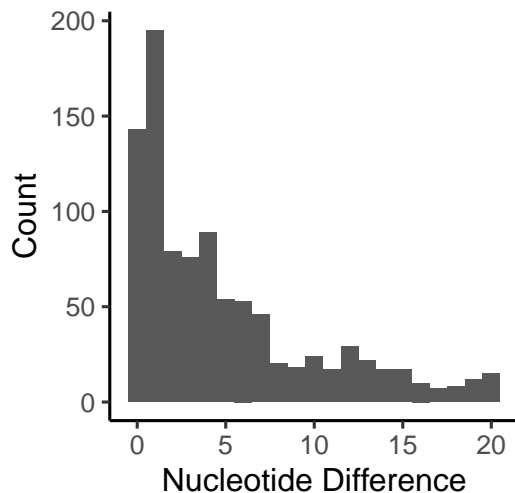
IGHV3-22*02

3 sequences assigned
No exact matches.



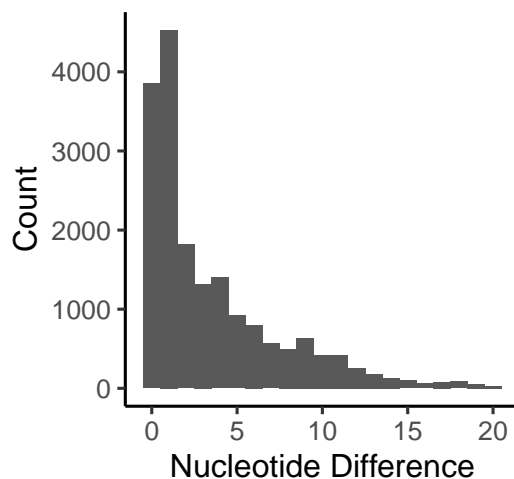
IGHV3-20*01

973 sequences assigned
143 (14.7%) exact matches, in which:
105 unique CDR3
6 unique J



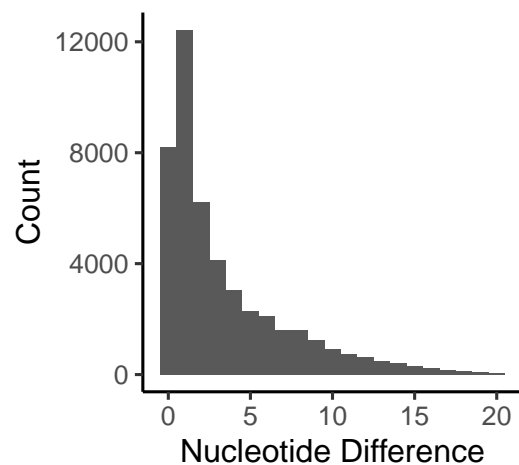
IGHV3-21*01

18332 sequences assigned
3853 (21%) exact matches, in which:
3160 unique CDR3
7 unique J



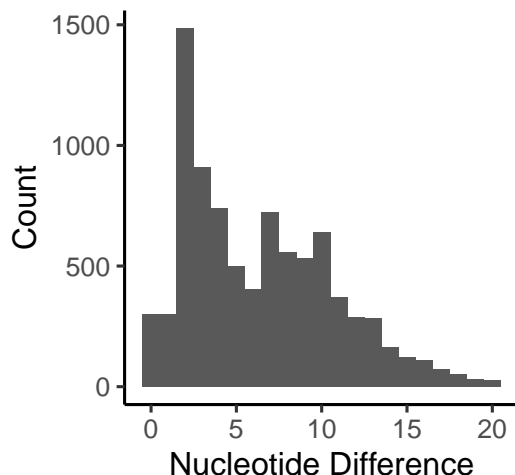
IGHV3-23*01

47293 sequences assigned
8211 (17.4%) exact matches, in which:
6779 unique CDR3
7 unique J



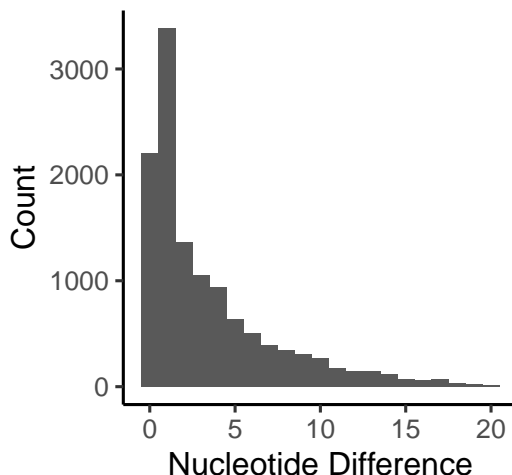
IGHV3-23*04_A39C

8865 sequences assigned
302 (3.4%) exact matches, in which:
299 unique CDR3
7 unique J



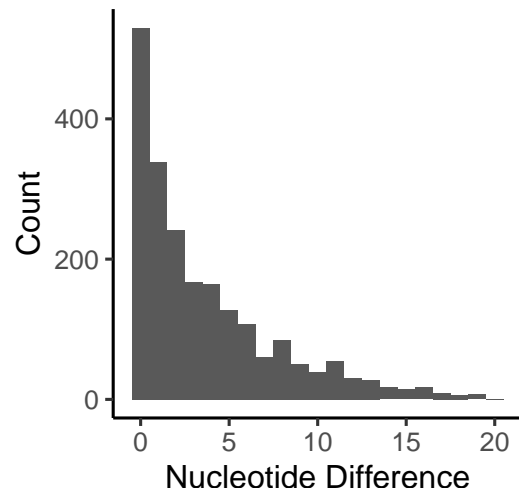
IGHV3-30*18

12379 sequences assigned
2203 (17.8%) exact matches, in which:
1699 unique CDR3
7 unique J



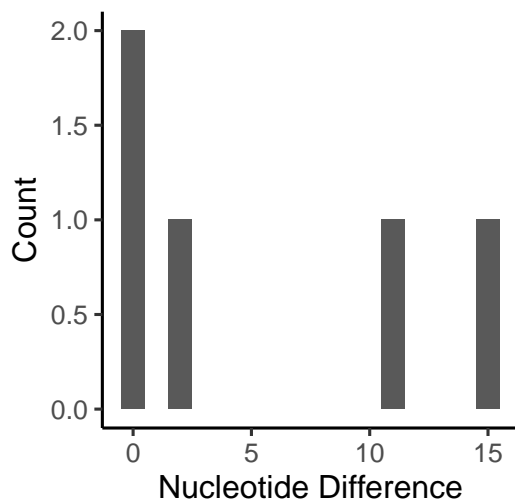
IGHV3-33*06_T300C_G3

2111 sequences assigned
530 (25.1%) exact matches, in which:
522 unique CDR3
7 unique J



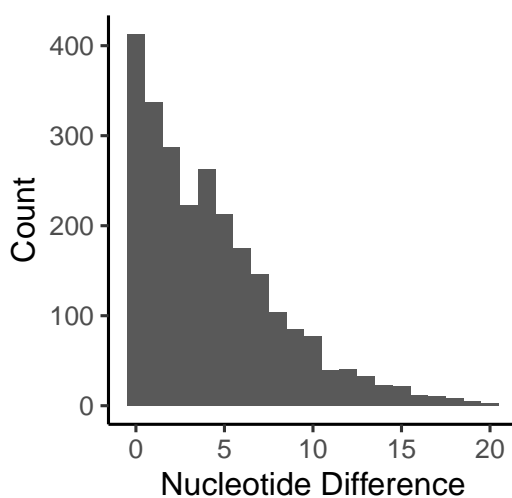
IGHV3-30-3*01

5 sequences assigned
2 (40%) exact matches, in which:
2 unique CDR3
1 unique J



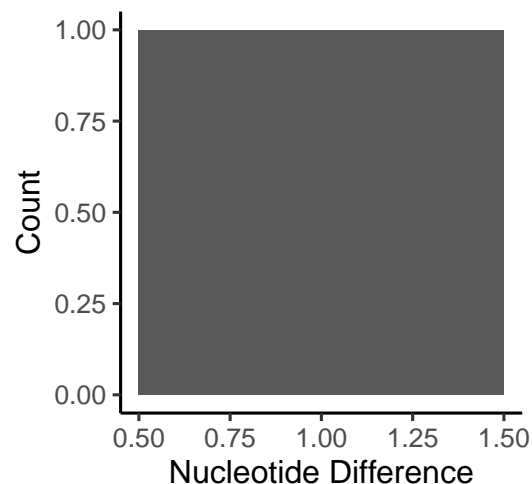
IGHV3-30*03_T288C

2537 sequences assigned
413 (16.3%) exact matches, in which:
407 unique CDR3
7 unique J



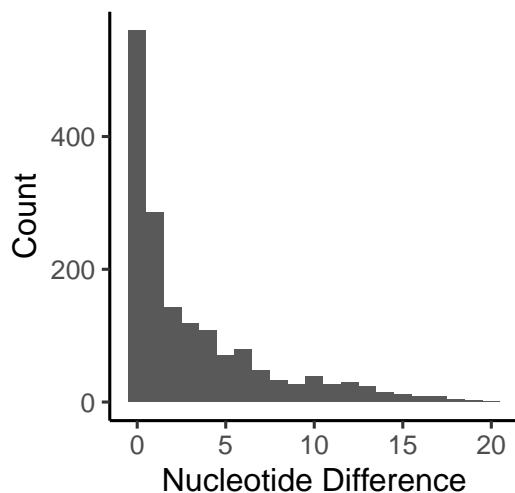
IGHV3-35*01

1 sequences assigned
No exact matches.



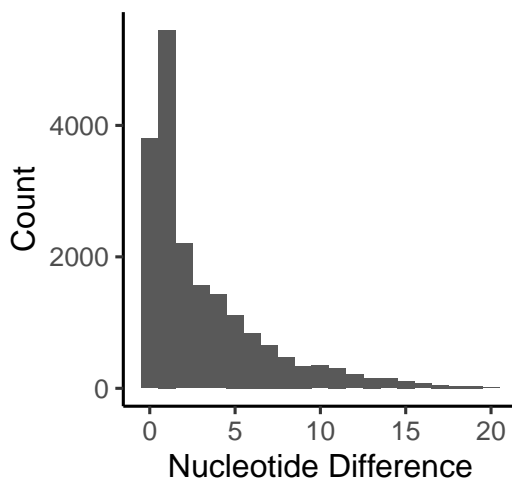
IGHV3-30*03

1647 sequences assigned
560 (34%) exact matches, in which:
550 unique CDR3
7 unique J



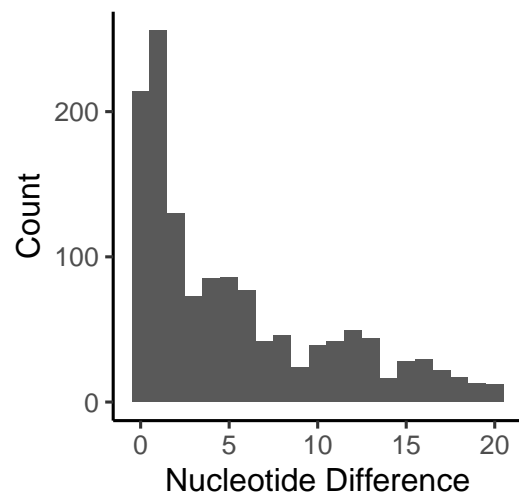
IGHV3-33*01

19514 sequences assigned
3799 (19.5%) exact matches, in which:
3078 unique CDR3
7 unique J



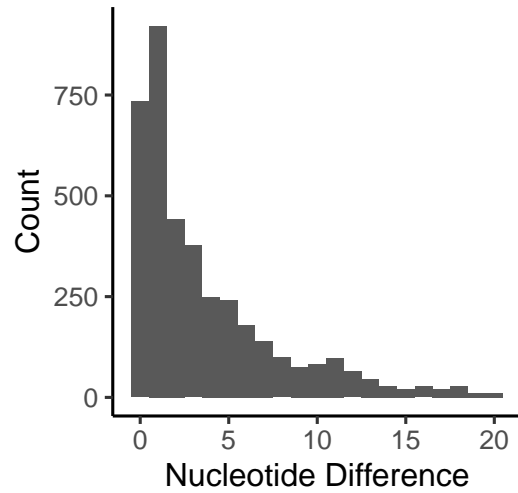
IGHV3-43*01

1365 sequences assigned
214 (15.7%) exact matches, in which:
183 unique CDR3
7 unique J



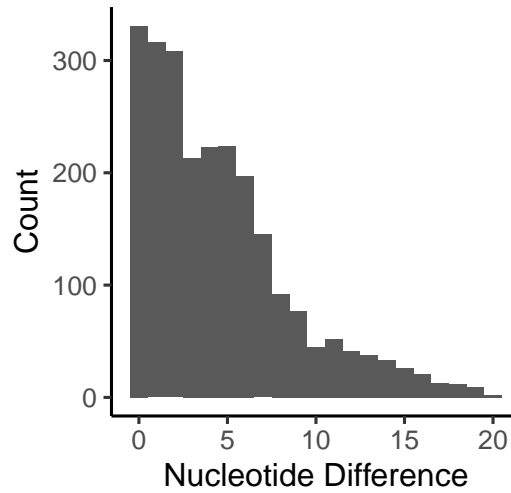
IGHV3-48*01

3914 sequences assigned
734 (18.8%) exact matches, in which:
609 unique CDR3
7 unique J



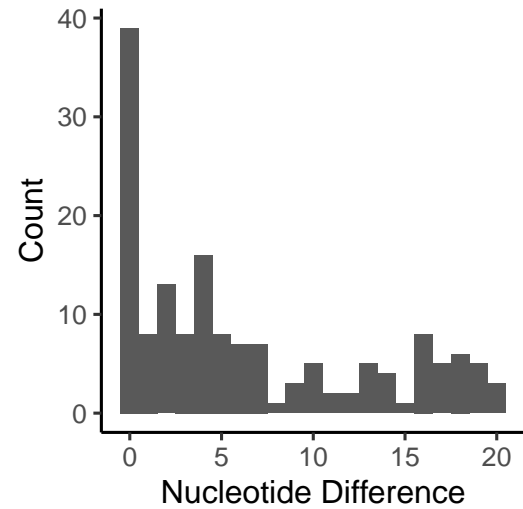
IGHV3-48*03_T303G

2433 sequences assigned
331 (13.6%) exact matches, in which:
328 unique CDR3
7 unique J



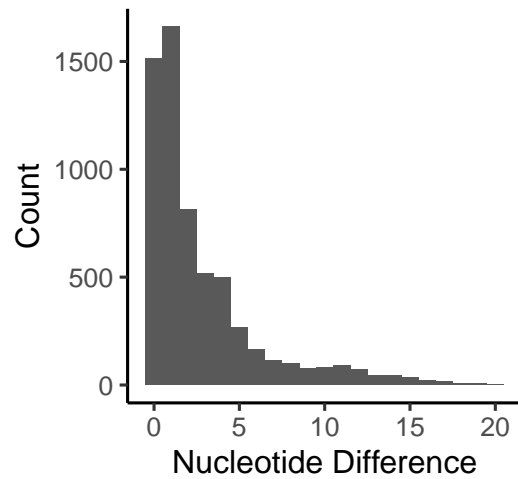
IGHV3-49*03_A313G_T3

160 sequences assigned
39 (24.4%) exact matches, in which:
39 unique CDR3
6 unique J



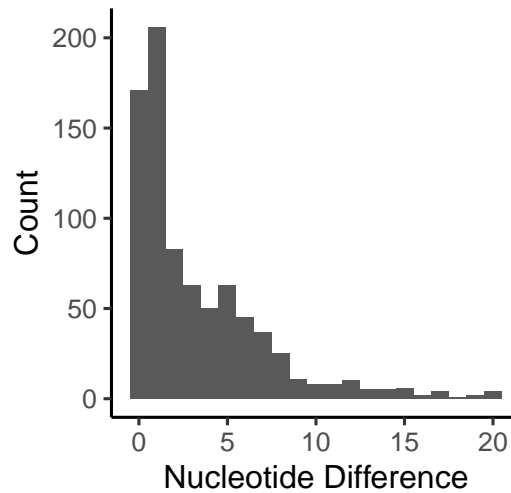
IGHV3-48*03

6164 sequences assigned
1514 (24.6%) exact matches, in which:
1249 unique CDR3
7 unique J



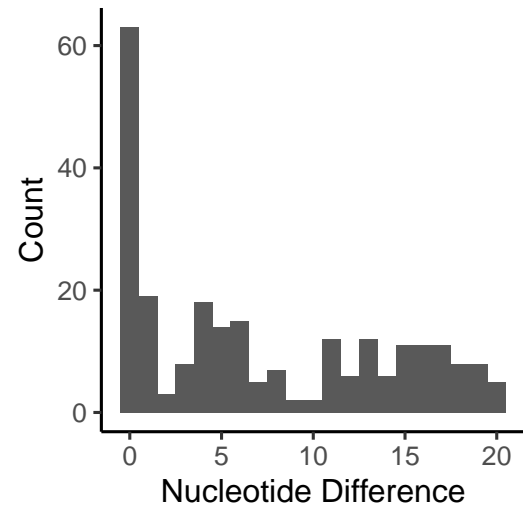
IGHV3-49*03

820 sequences assigned
171 (20.9%) exact matches, in which:
141 unique CDR3
6 unique J



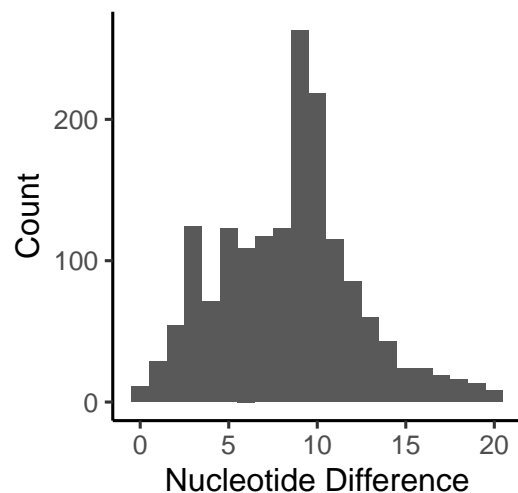
IGHV3-49*04_A313G_T3

259 sequences assigned
63 (24.3%) exact matches, in which:
63 unique CDR3
7 unique J



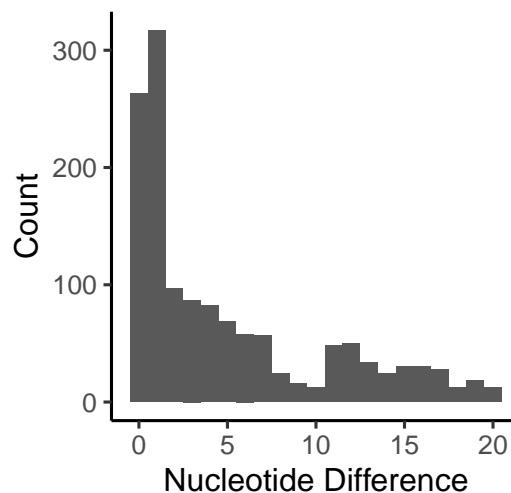
IGHV3-48*04

1677 sequences assigned
11 (0.7%) exact matches, in which:
11 unique CDR3
5 unique J



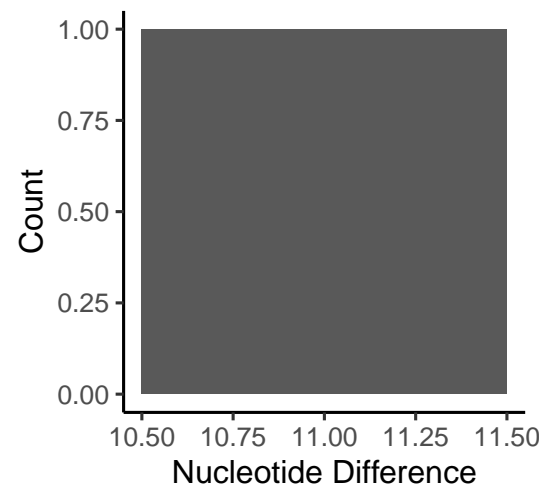
IGHV3-49*04

1395 sequences assigned
263 (18.9%) exact matches, in which:
211 unique CDR3
7 unique J



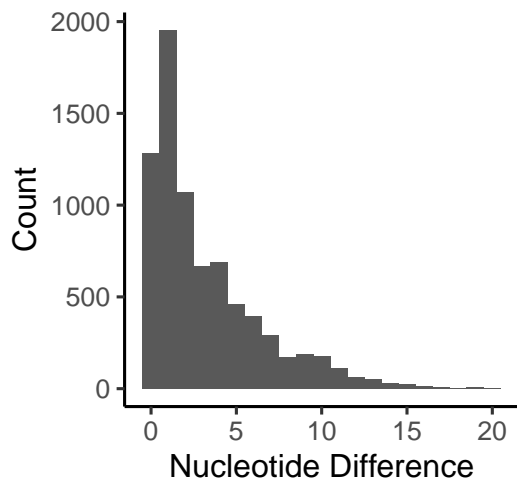
IGHV3-52*01

1 sequences assigned
No exact matches.



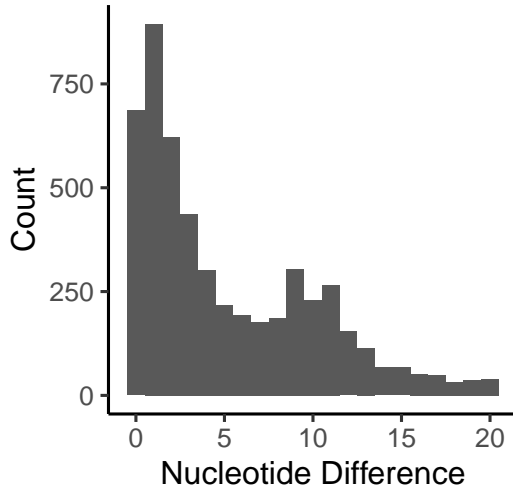
IGHV3-53*01

7727 sequences assigned
1282 (16.6%) exact matches, in which:
1021 unique CDR3
7 unique J



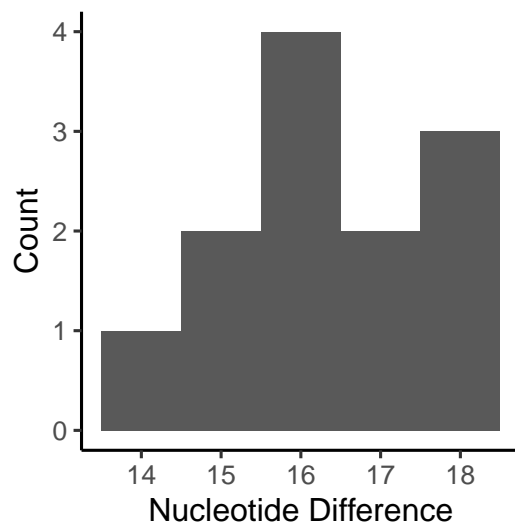
IGHV3-66*01

5265 sequences assigned
686 (13%) exact matches, in which:
555 unique CDR3
7 unique J



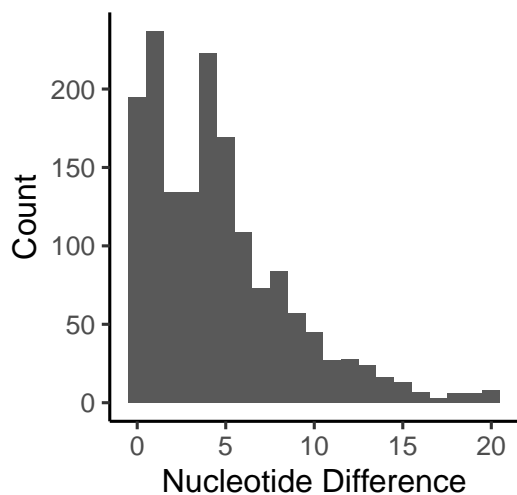
IGHV3-71*04

13 sequences assigned
No exact matches.



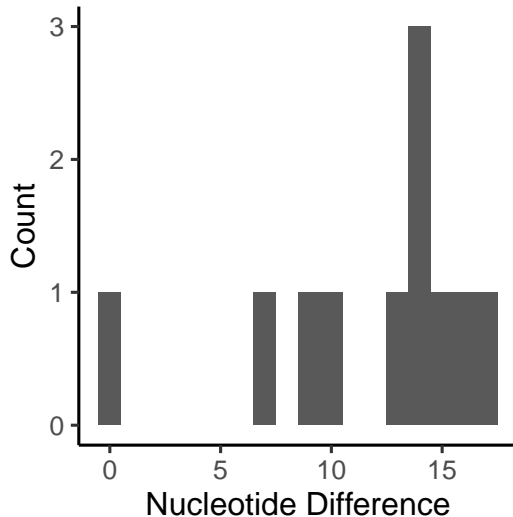
IGHV3-53*01_T267G_G3

1613 sequences assigned
195 (12.1%) exact matches, in which:
195 unique CDR3
7 unique J



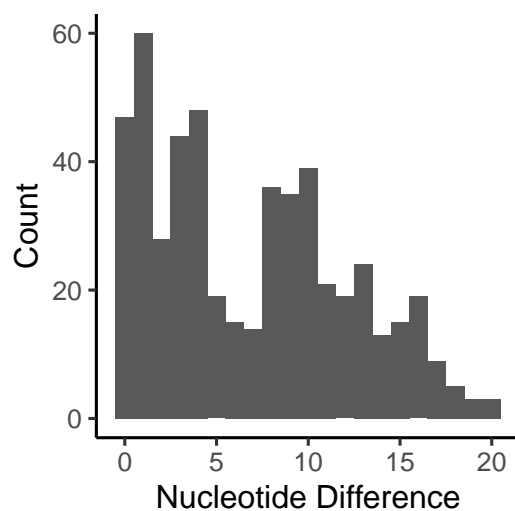
IGHV3-69-1*01

15 sequences assigned
1 (6.7%) exact matches, in which:
1 unique CDR3
1 unique J



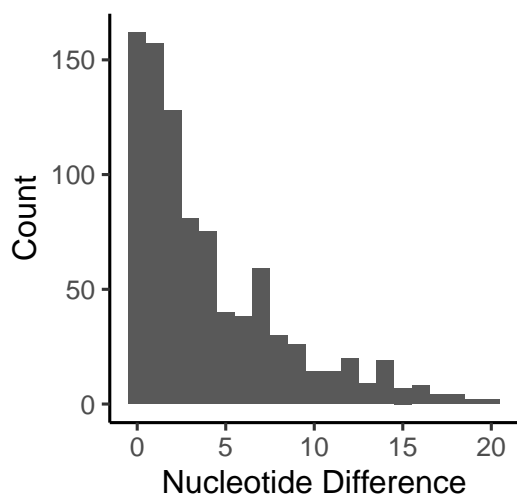
IGHV3-72*01

533 sequences assigned
47 (8.8%) exact matches, in which:
34 unique CDR3
4 unique J



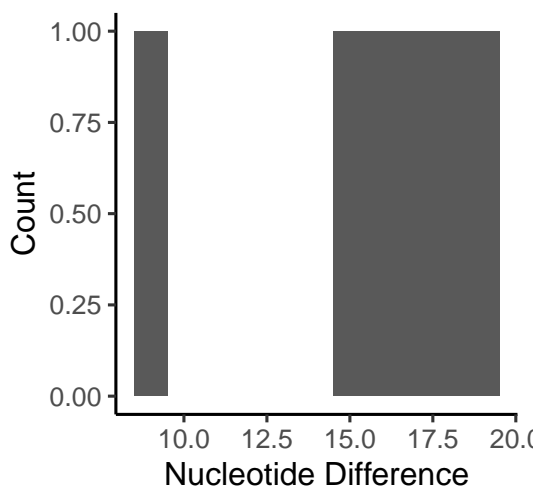
IGHV3-64*01

922 sequences assigned
162 (17.6%) exact matches, in which:
137 unique CDR3
6 unique J



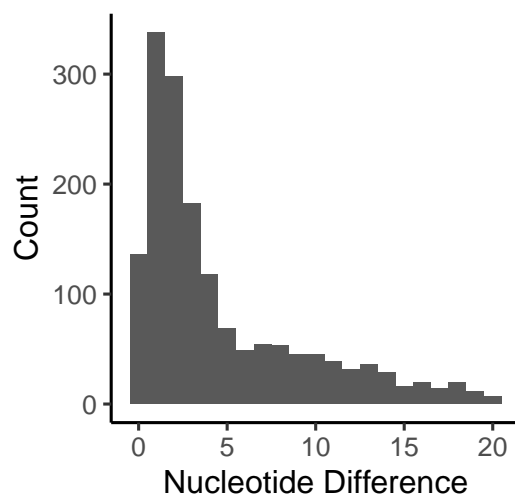
IGHV3-69-1*02

6 sequences assigned
No exact matches.



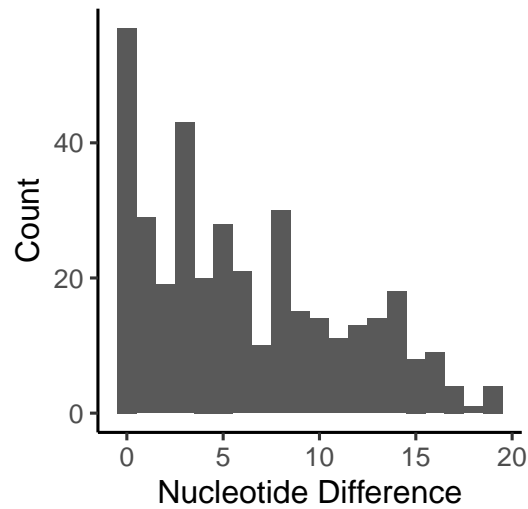
IGHV3-73*01

1632 sequences assigned
136 (8.3%) exact matches, in which:
93 unique CDR3
5 unique J



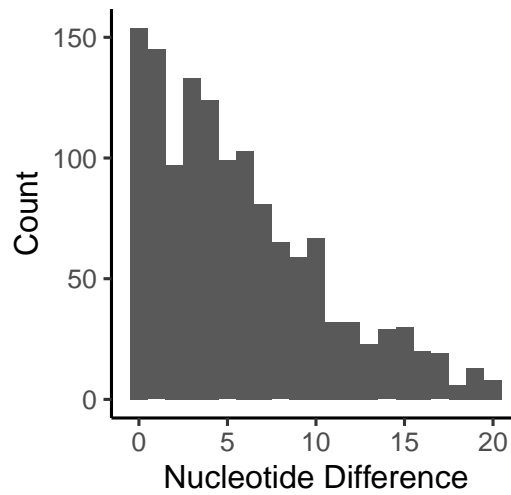
IGHV3-73*01_A313G_T3'

385 sequences assigned
57 (14.8%) exact matches, in which:
55 unique CDR3
6 unique J



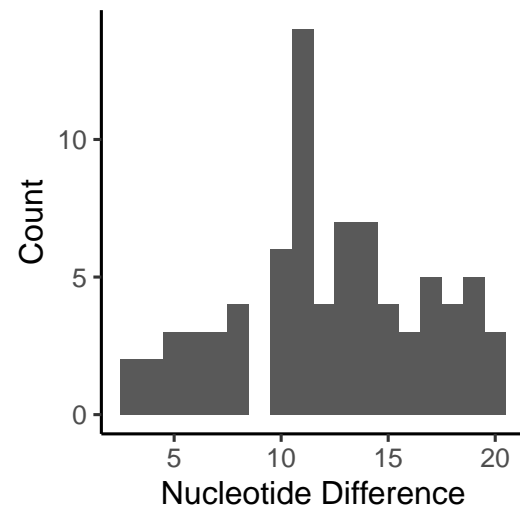
IGHV3-74*01_A315G

1353 sequences assigned
154 (11.4%) exact matches, in which:
152 unique CDR3
7 unique J



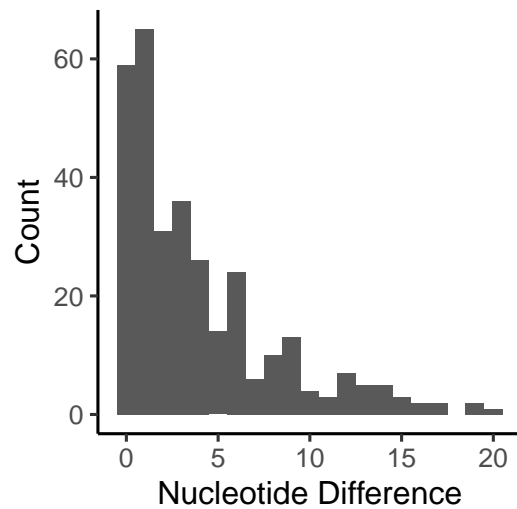
IGHV3-NL1*01

92 sequences assigned
No exact matches.



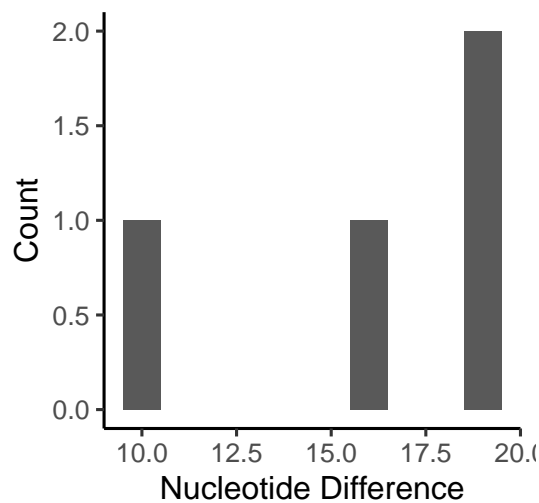
IGHV3-73*02_A313G_T3'

321 sequences assigned
59 (18.4%) exact matches, in which:
53 unique CDR3
6 unique J



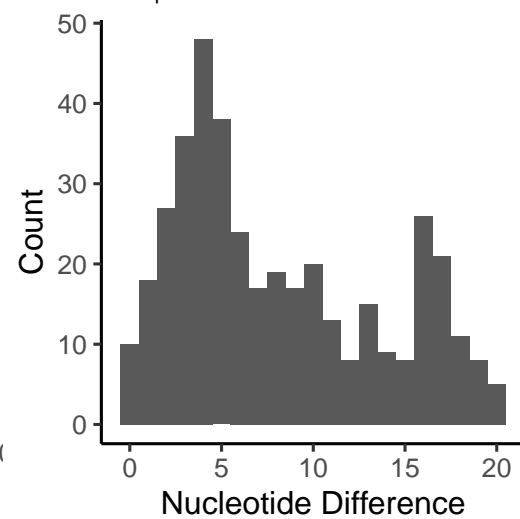
IGHV3-43D*04

4 sequences assigned
No exact matches.



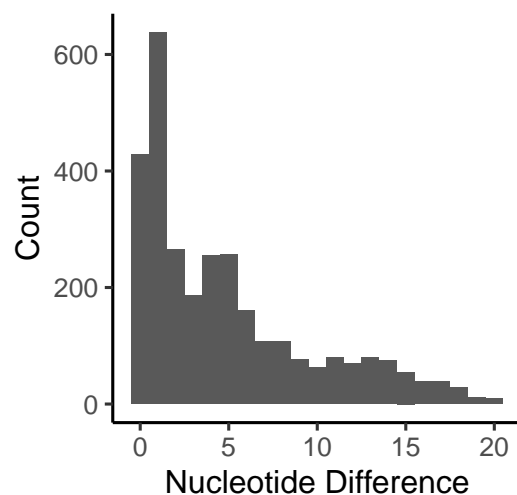
IGHV3-NL1*01_G49A_G7'

406 sequences assigned
10 (2.5%) exact matches, in which:
10 unique CDR3
4 unique J



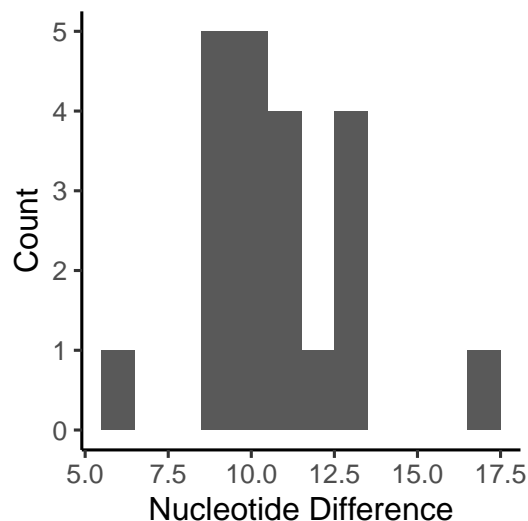
IGHV3-74*01

3077 sequences assigned
428 (13.9%) exact matches, in which:
346 unique CDR3
7 unique J



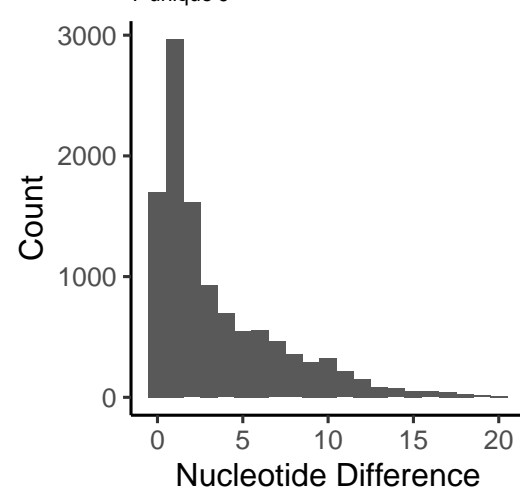
IGHV3-64D*06

22 sequences assigned
No exact matches.



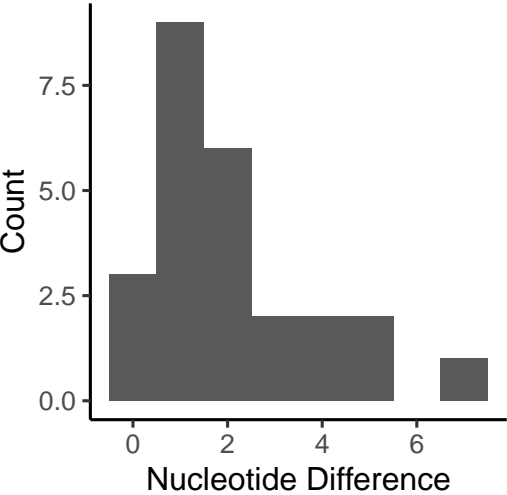
IGHV4-4*07

11238 sequences assigned
1703 (15.2%) exact matches, in which:
1445 unique CDR3
7 unique J



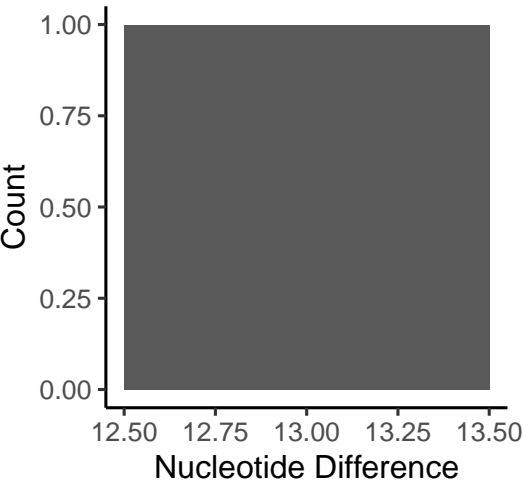
IGHV4-28*01

25 sequences assigned
3 (12%) exact matches, in which:
2 unique CDR3
1 unique J



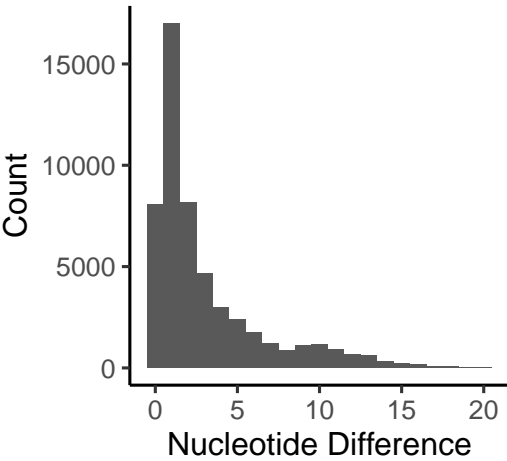
IGHV4-30-2*03

7 sequences assigned
No exact matches.



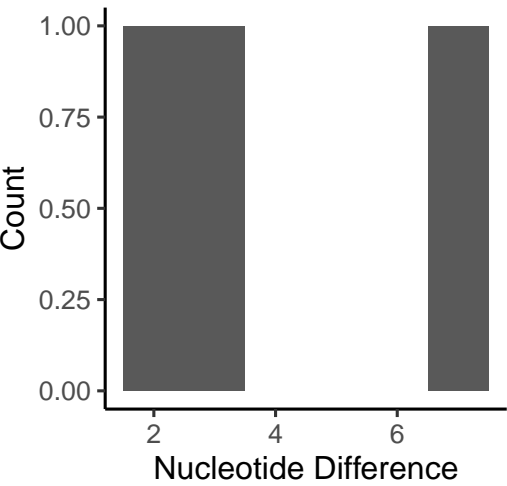
IGHV4-34*01

53129 sequences assigned
8045 (15.1%) exact matches, in which:
6518 unique CDR3
7 unique J



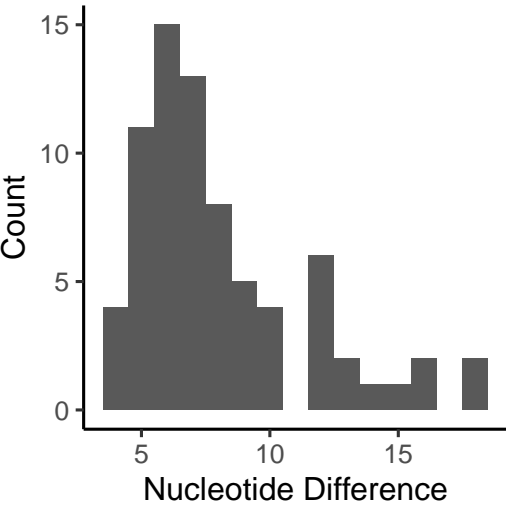
IGHV4-28*03

3 sequences assigned
No exact matches.



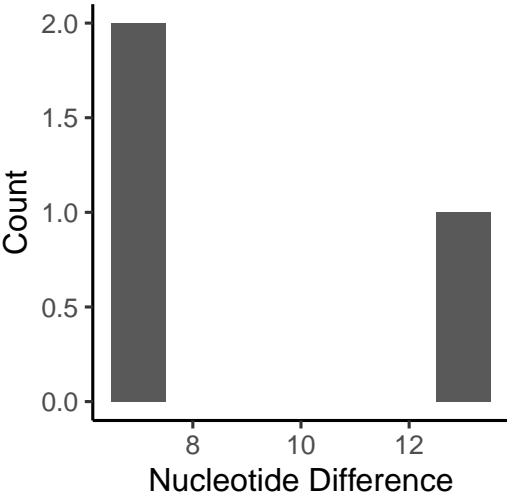
IGHV4-30-4*08

76 sequences assigned
No exact matches.



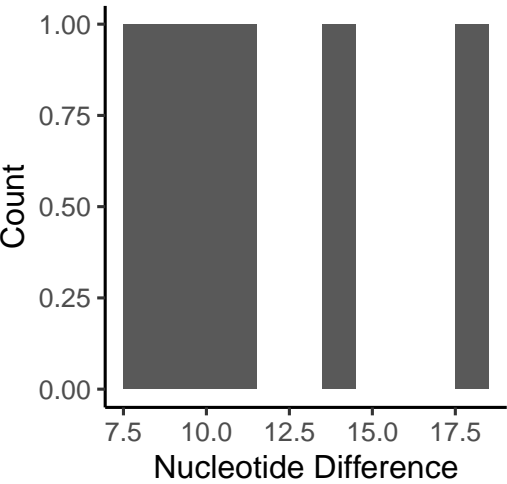
IGHV4-38-2*01

74 sequences assigned
No exact matches.



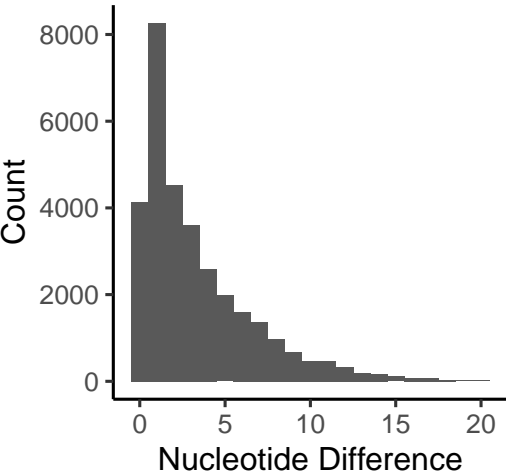
IGHV4-30-4*01

8 sequences assigned
No exact matches.



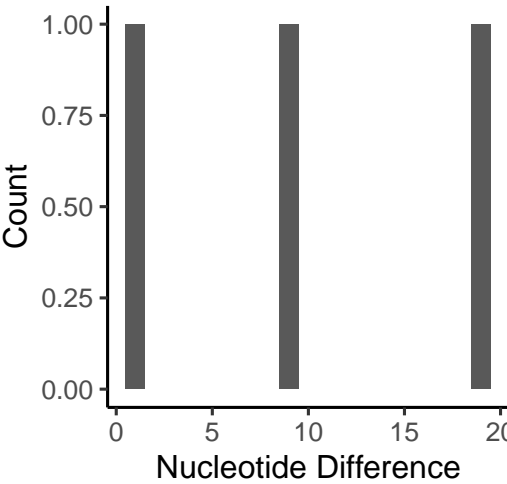
IGHV4-31*03

31995 sequences assigned
4135 (12.9%) exact matches, in which:
3396 unique CDR3
7 unique J



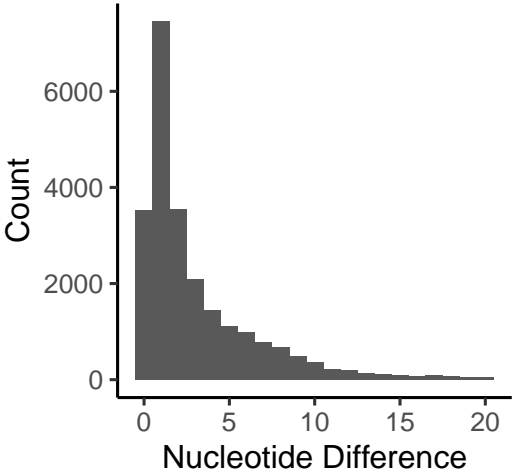
IGHV4-38-2*02

13 sequences assigned
No exact matches.



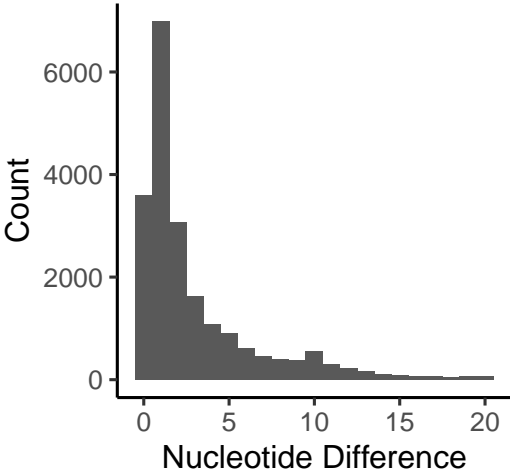
IGHV4-39*01

23828 sequences assigned
3517 (14.8%) exact matches, in which:
2962 unique CDR3
7 unique J



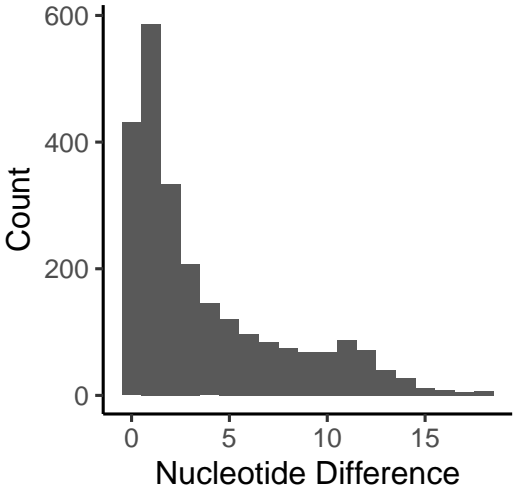
IGHV4-59*01

21123 sequences assigned
3595 (17%) exact matches, in which:
2962 unique CDR3
7 unique J



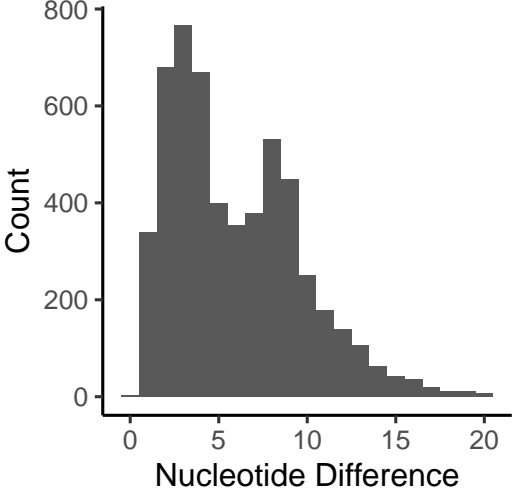
IGHV4-61*01

2485 sequences assigned
431 (17.3%) exact matches, in which:
391 unique CDR3
7 unique J



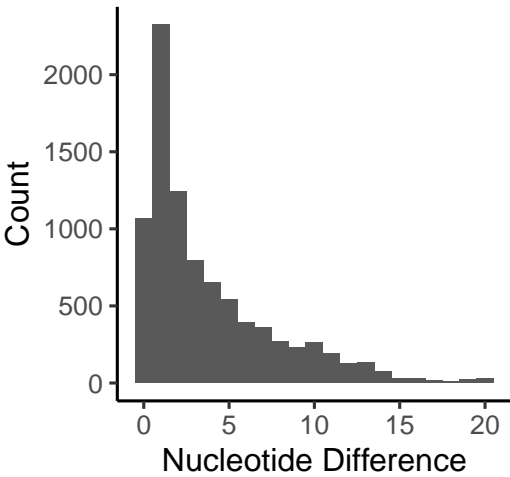
IGHV4-39*07

5471 sequences assigned
4 (0.1%) exact matches, in which:
4 unique CDR3
3 unique J



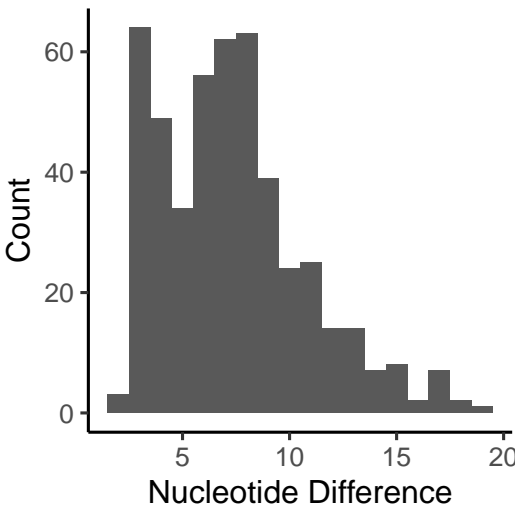
IGHV4-59*08

8864 sequences assigned
1064 (12%) exact matches, in which:
872 unique CDR3
7 unique J



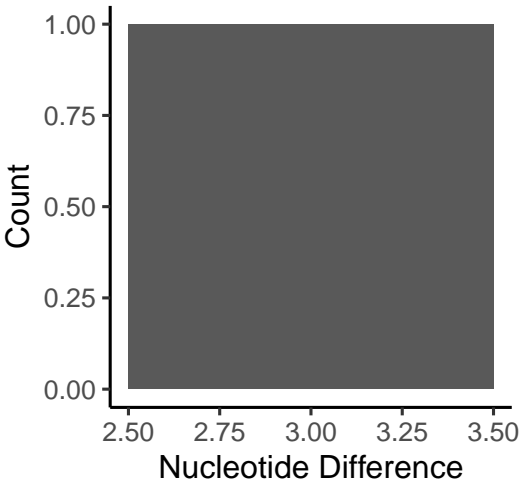
IGHV4-61*02

478 sequences assigned
No exact matches.



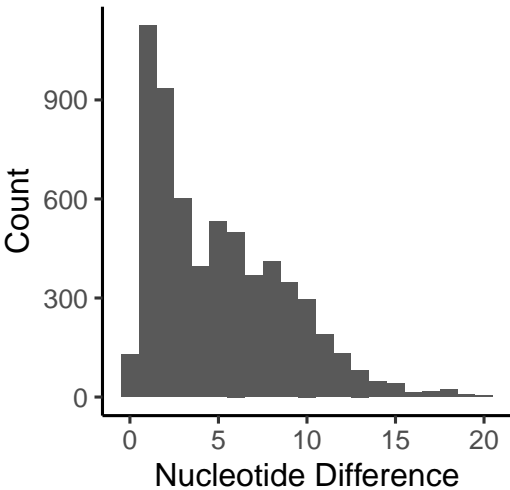
IGHV4-55*01

1 sequences assigned
No exact matches.



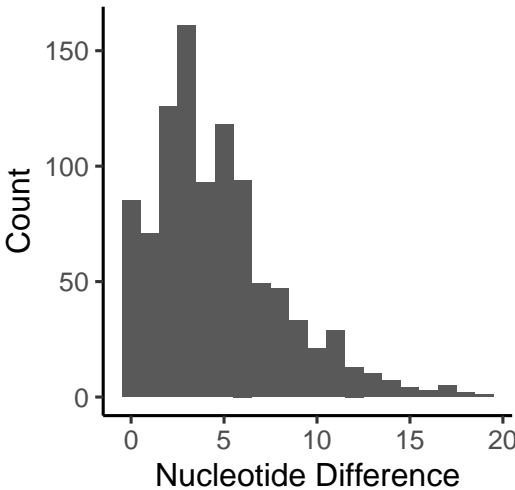
IGHV4-59*12

6266 sequences assigned
130 (2.1%) exact matches, in which:
130 unique CDR3
7 unique J



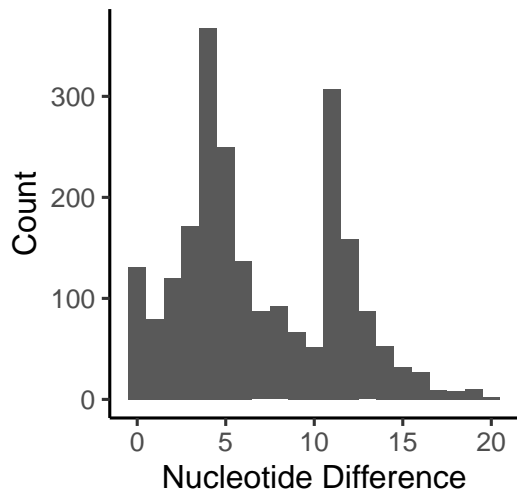
IGHV4-61*01_G4C_G88

976 sequences assigned
85 (8.7%) exact matches, in which:
84 unique CDR3
6 unique J



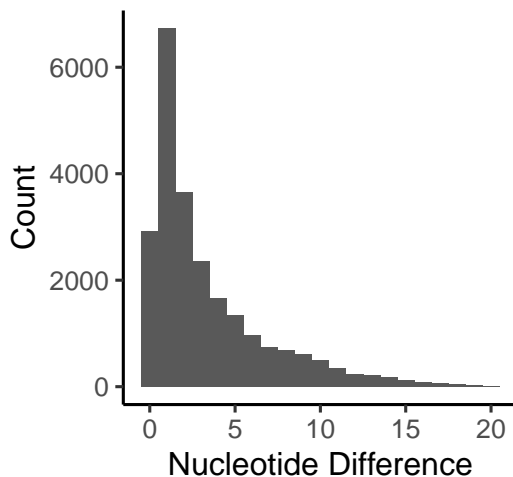
IGHV4–61*08_G48A_G4!

2262 sequences assigned
131 (5.8%) exact matches, in which:
130 unique CDR3
6 unique J



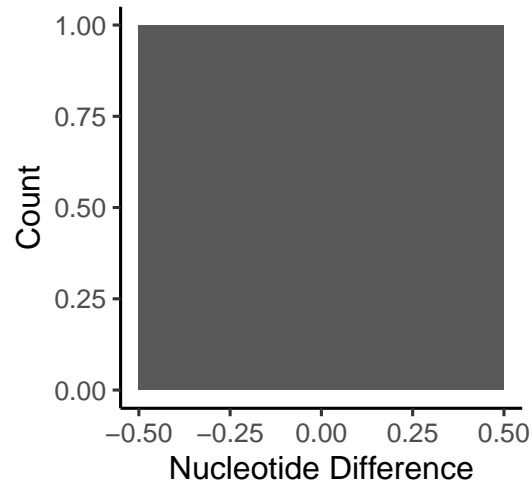
IGHV5–51*01

23756 sequences assigned
2913 (12.3%) exact matches, in which:
2044 unique CDR3
7 unique J



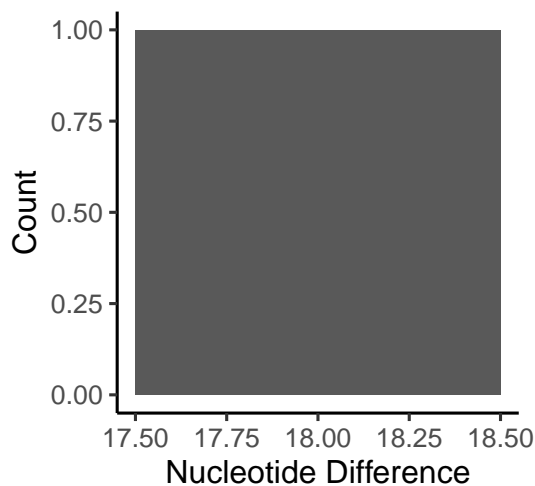
IGHV7–81*01

1 sequences assigned
1 (100%) exact matches, in which:
1 unique CDR3
1 unique J



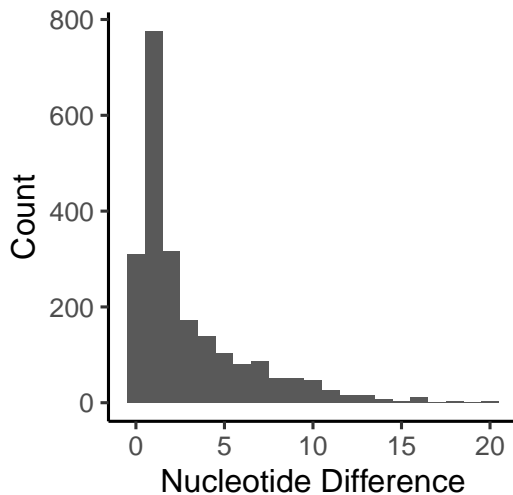
IGHV1/OR15–2*02

3 sequences assigned
No exact matches.



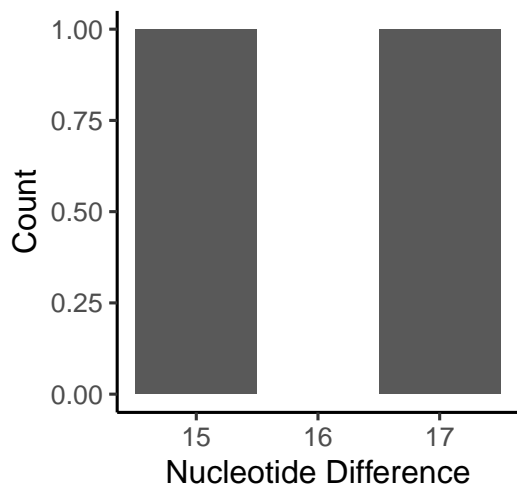
IGHV6–1*01

2230 sequences assigned
310 (13.9%) exact matches, in which:
243 unique CDR3
7 unique J



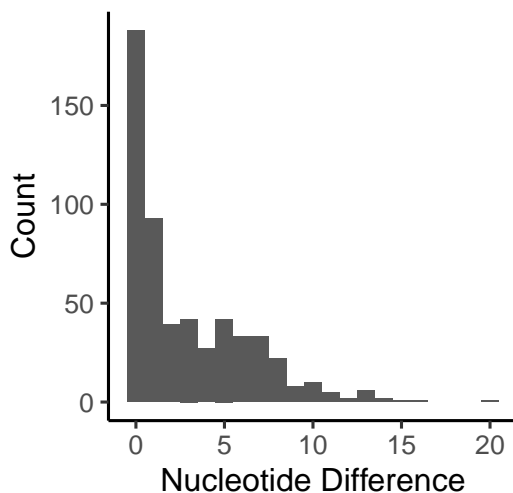
IGHV4/OR15–8*01

10 sequences assigned
No exact matches.

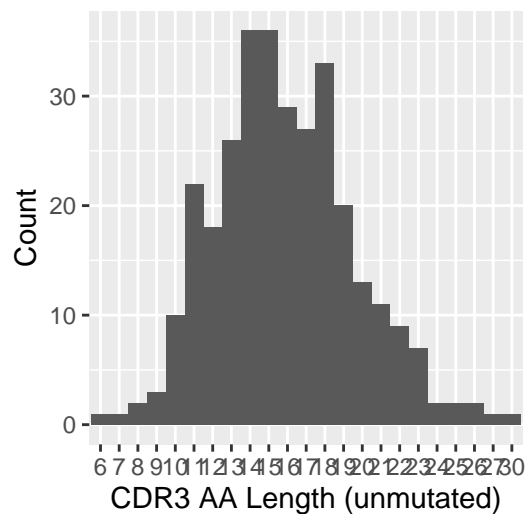


IGHV6–1*01_A315G

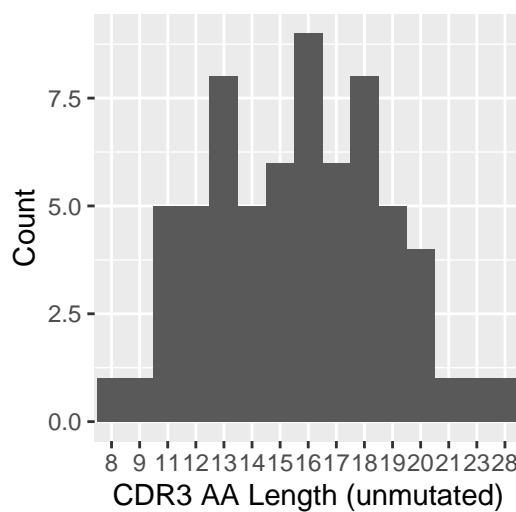
556 sequences assigned
188 (33.8%) exact matches, in which:
188 unique CDR3
7 unique J



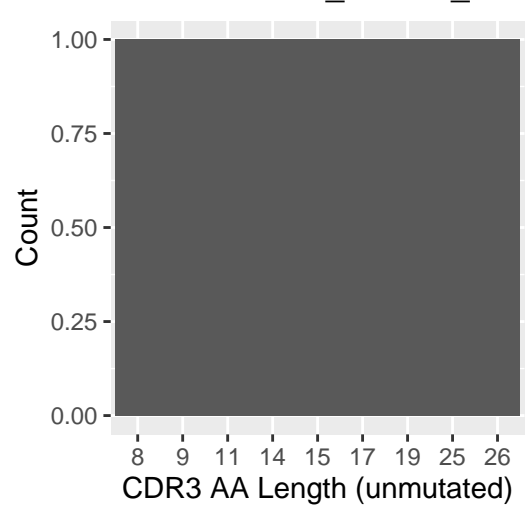
IGHV1-24*01_A315G_C317



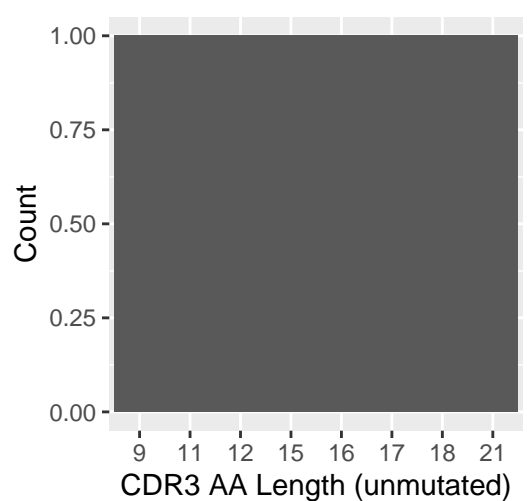
IGHV1-58*02_G316A_C317



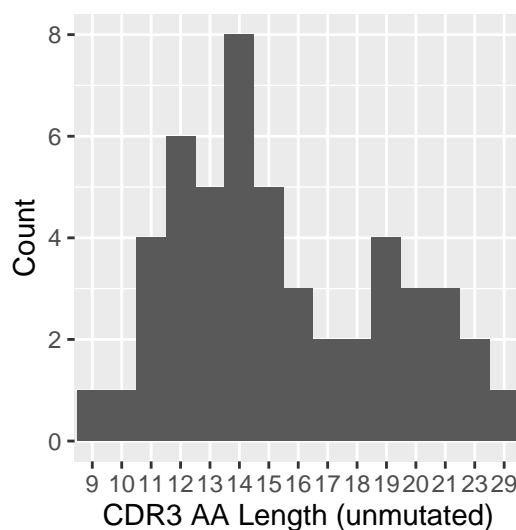
IGHV3-20*04_C258A_T279



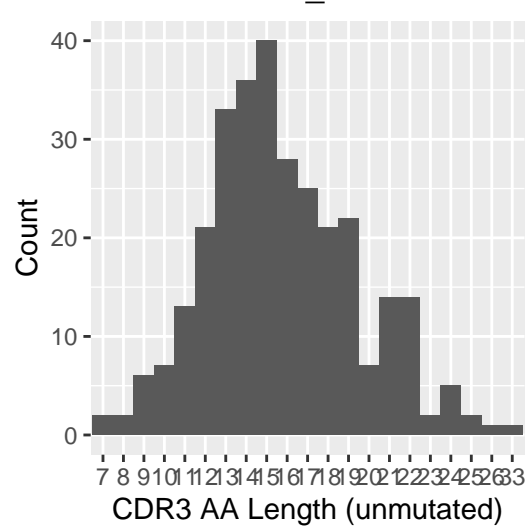
IGHV1-45*02_A297G_A307



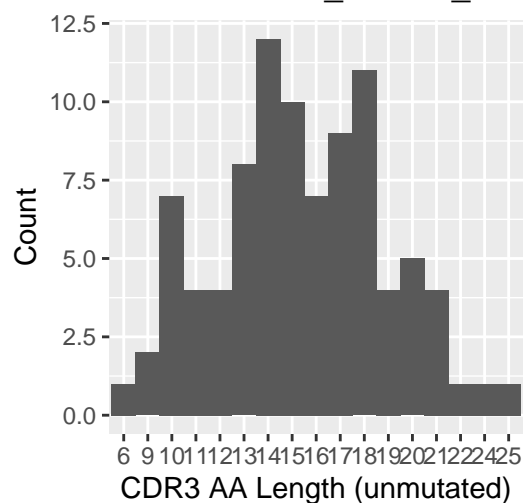
IGHV1-69-2*01_A315G_C317



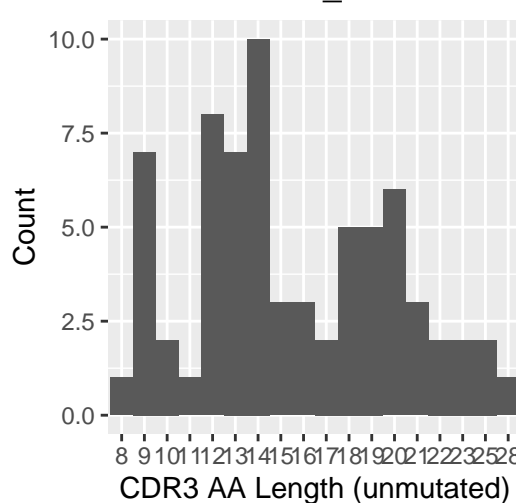
IGHV3-23*04_A39C



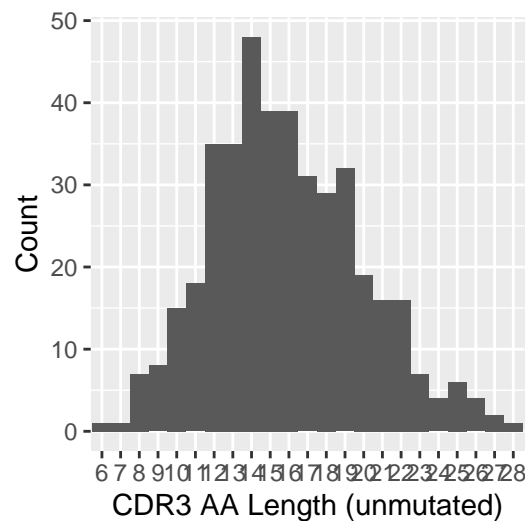
IGHV1-58*01_G316A_C317



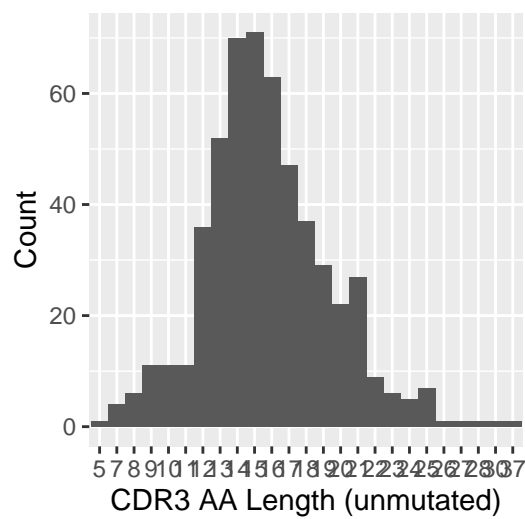
IGHV3-11*04_G240A



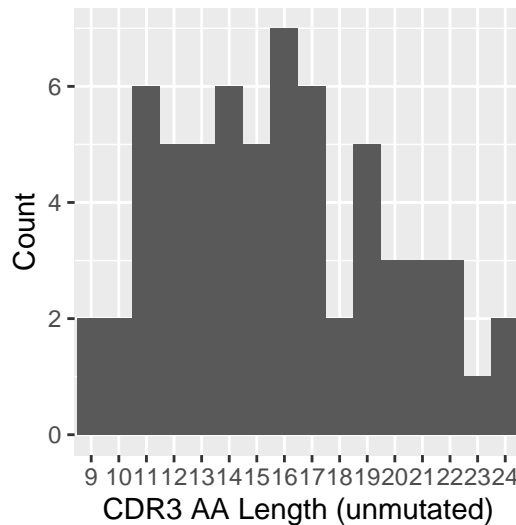
IGHV3-30*03_T288C



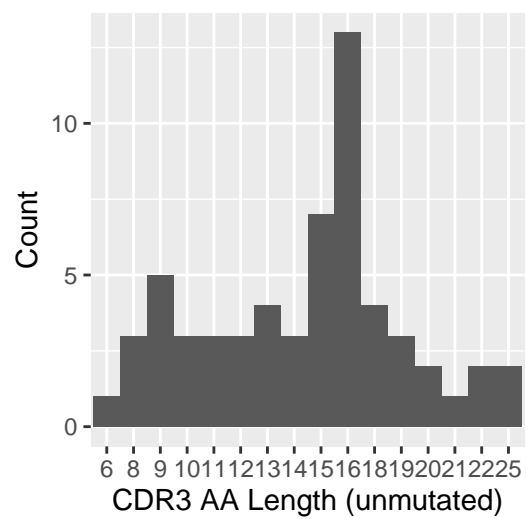
IGHV3-33*06_T300C_G303,



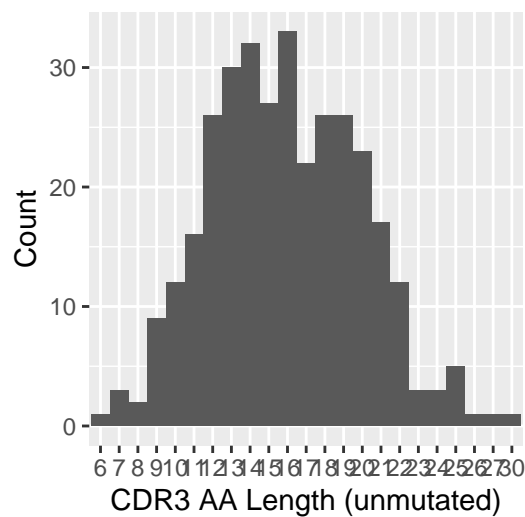
IGHV3-49*04_A313G_T315G



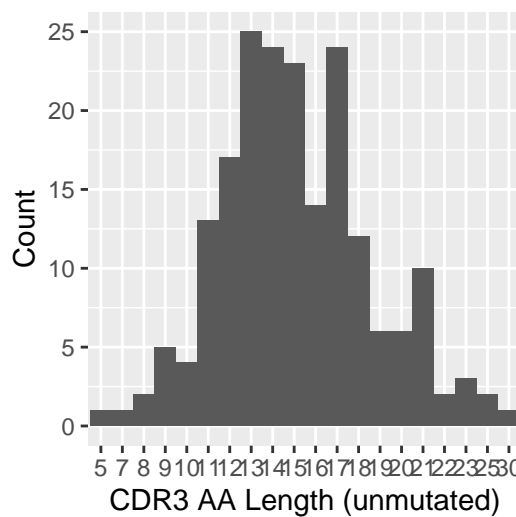
IGHV3-73*02_A313G_T315G



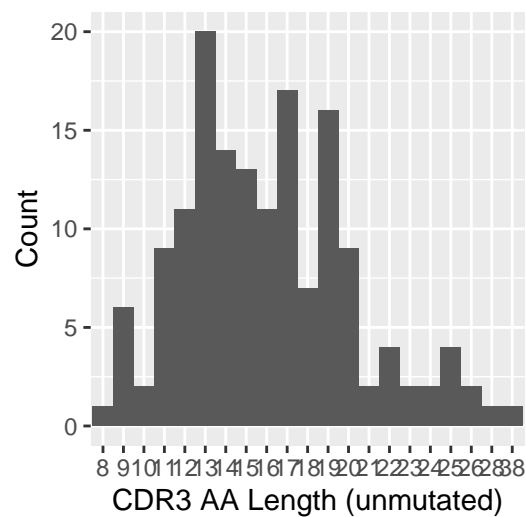
IGHV3-48*03_T303G



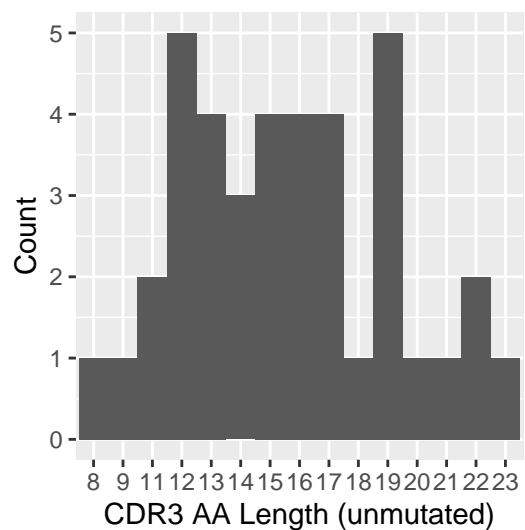
IGHV3-53*01_T267G_G303,



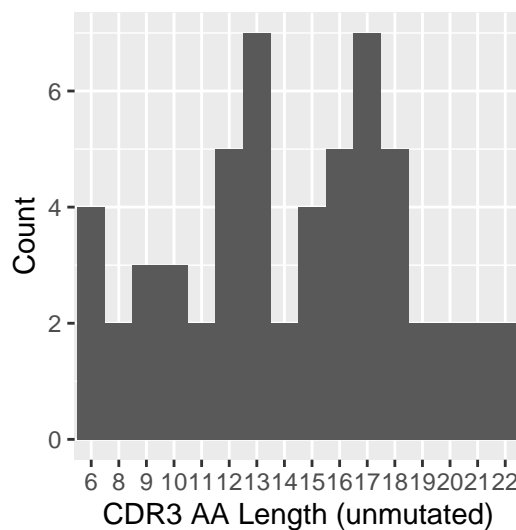
IGHV3-74*01_A315G



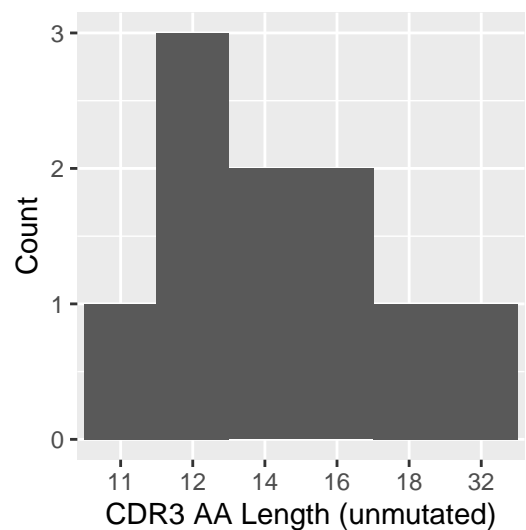
IGHV3-49*03_A313G_T315G



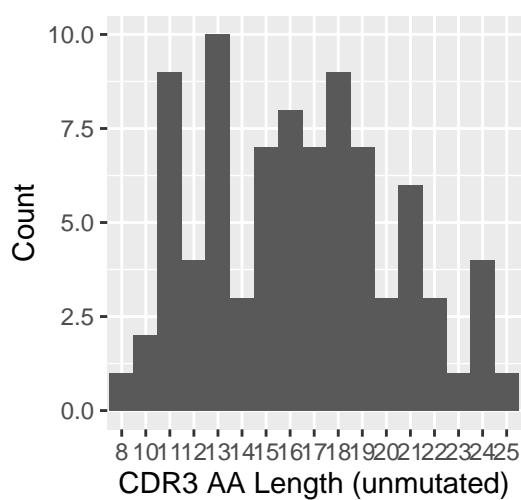
IGHV3-73*01_A313G_T315G



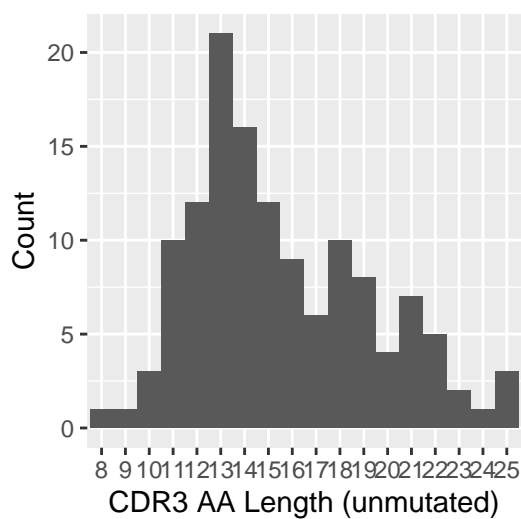
IGHV3-NL1*01_G49A_G75C,



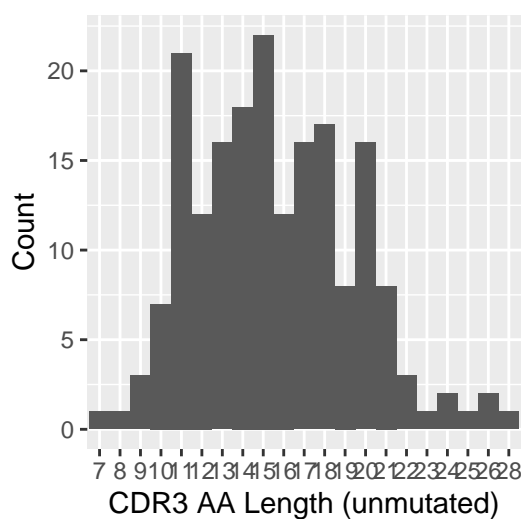
IGHV4-61*01_G4C_G88A_G103A

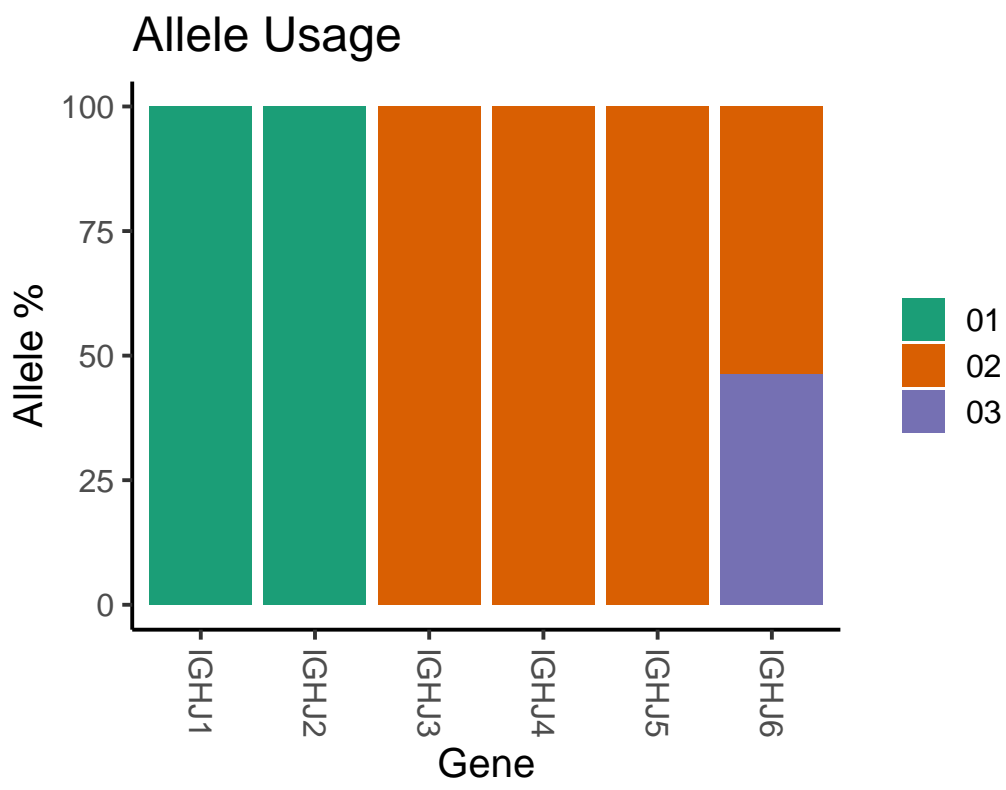


IGHV4-61*08_G48A_G49C_G88A



IGHV6-1*01_A315G





Sequence Count byIGHJ6 allele usage

