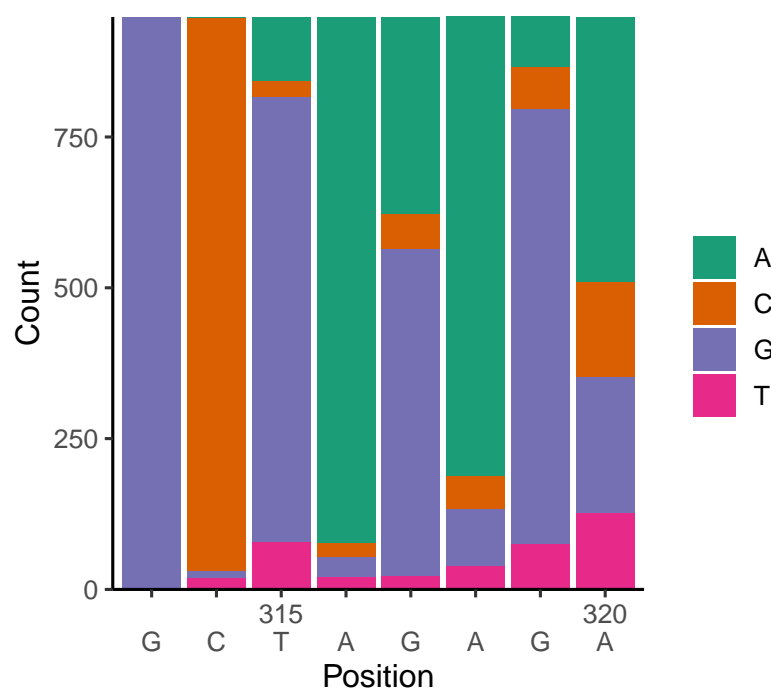
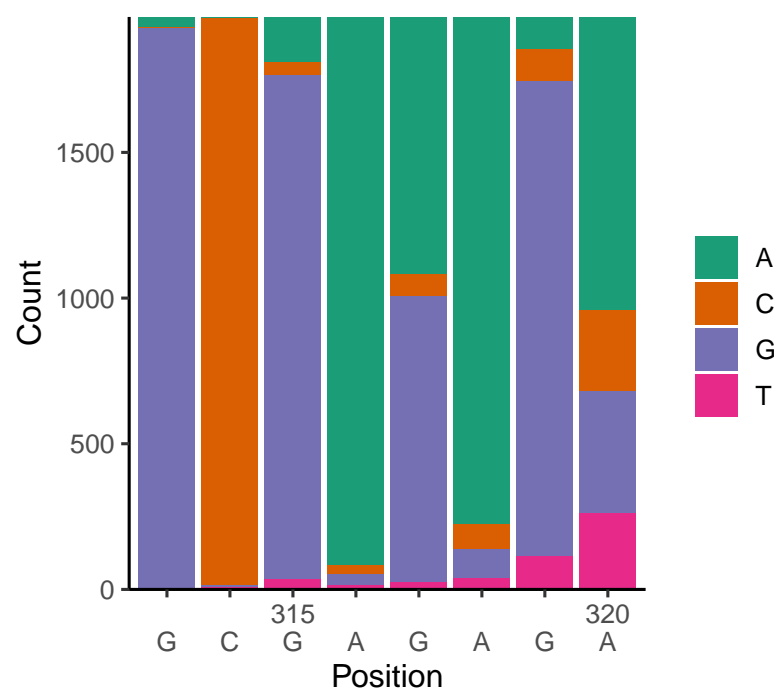


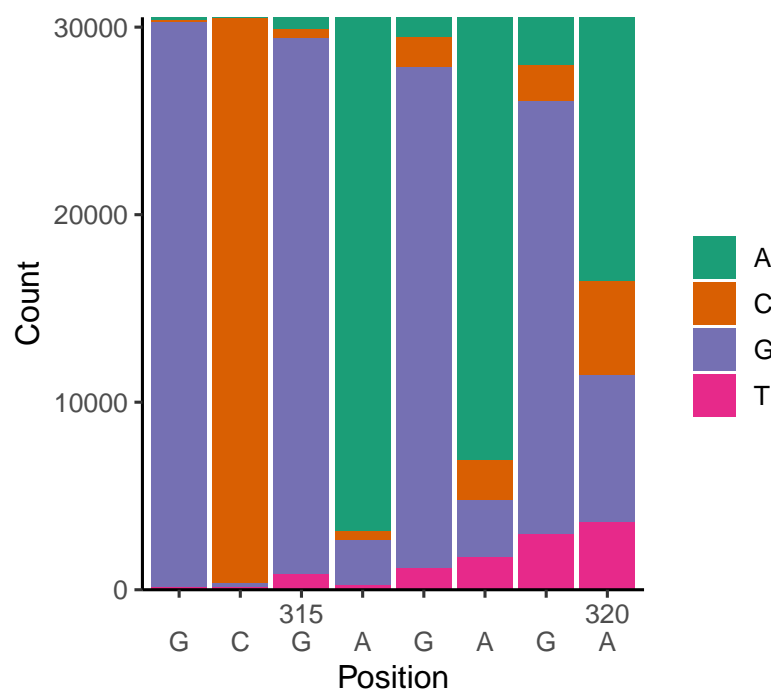
Gene IGHV3-49*03_A313G



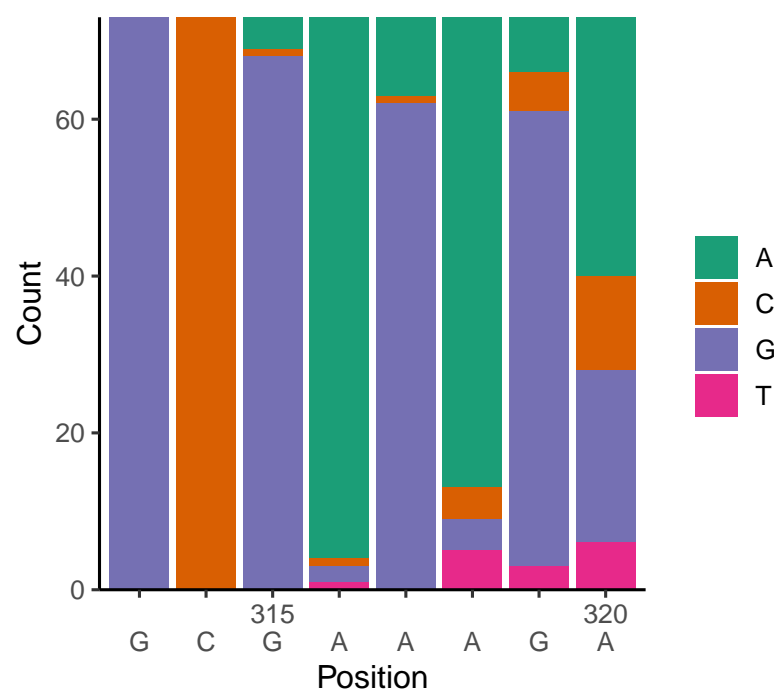
Gene IGHV3-66*01_A223C_T267G_T30



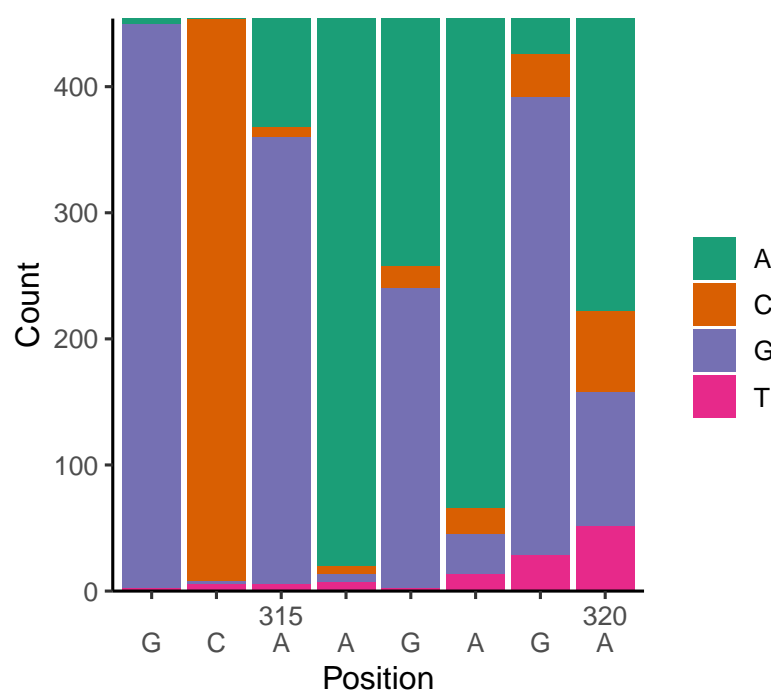
Gene IGHV1-69*08_C191T



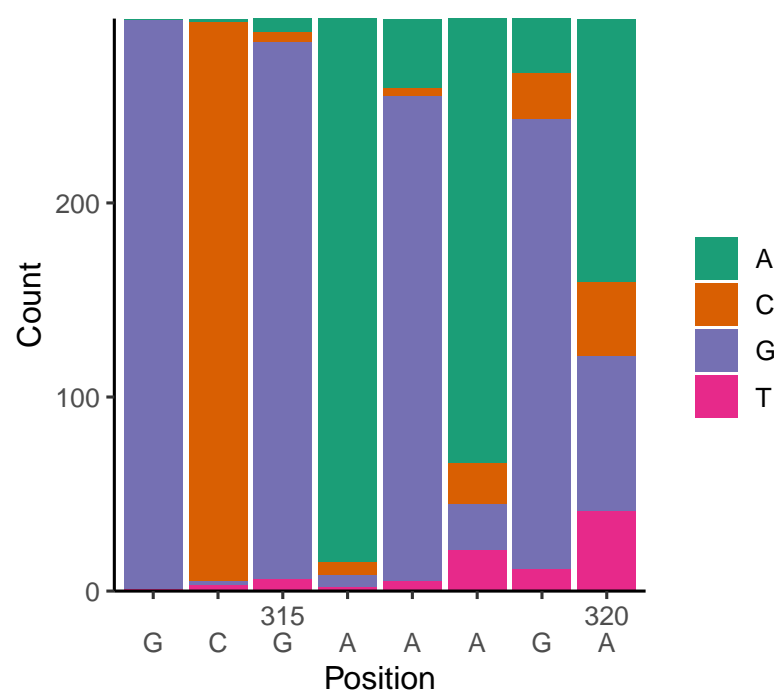
Gene IGHV3-NL1*01_T201C_G267T



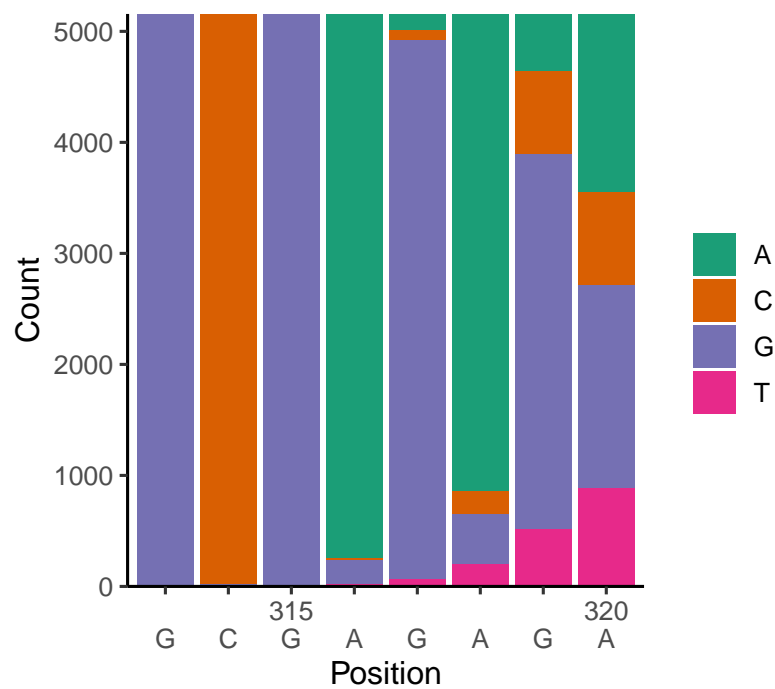
Gene IGHV3-13*01_G290A



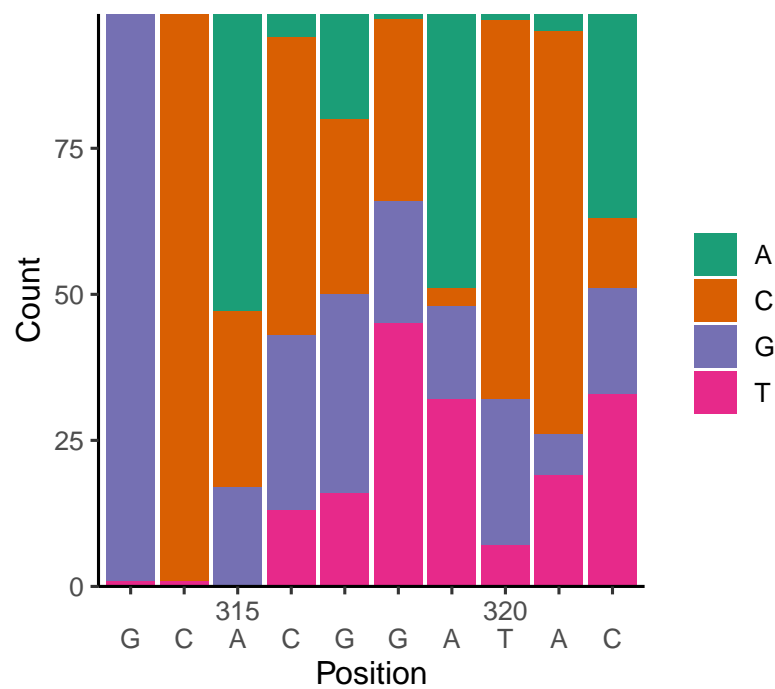
Gene IGHV3-NL1*01_G49A_T201C_G26



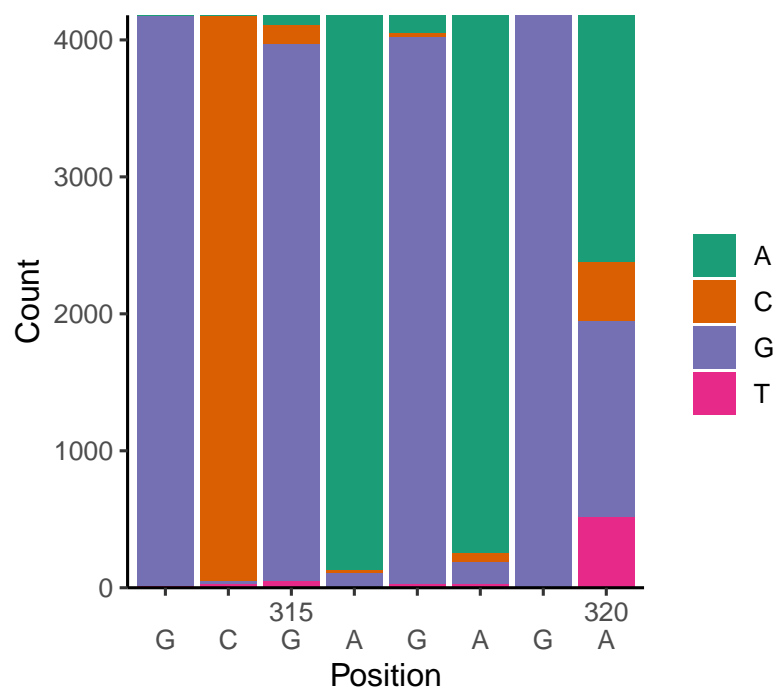
Gene IGHV4-30-2*01_C315G



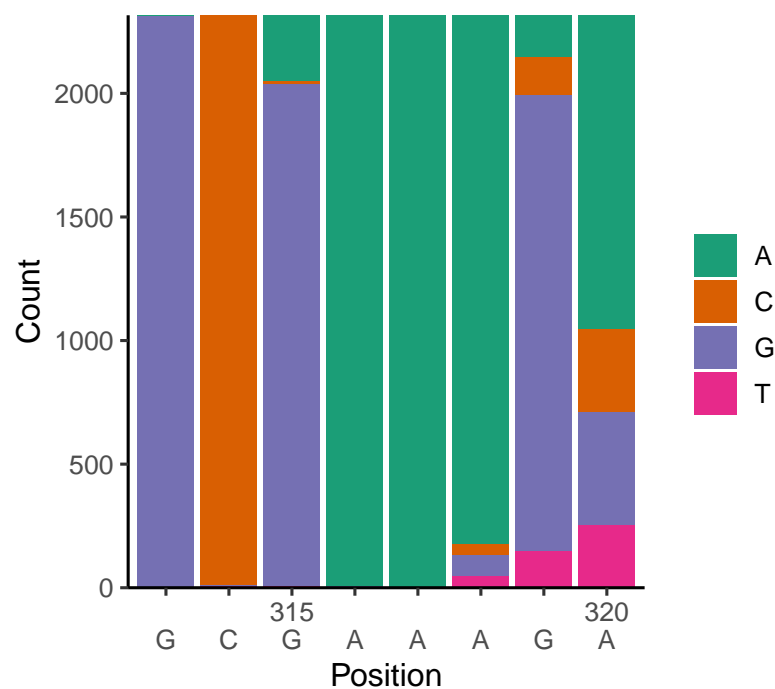
Gene IGHV2-70*04_T116C



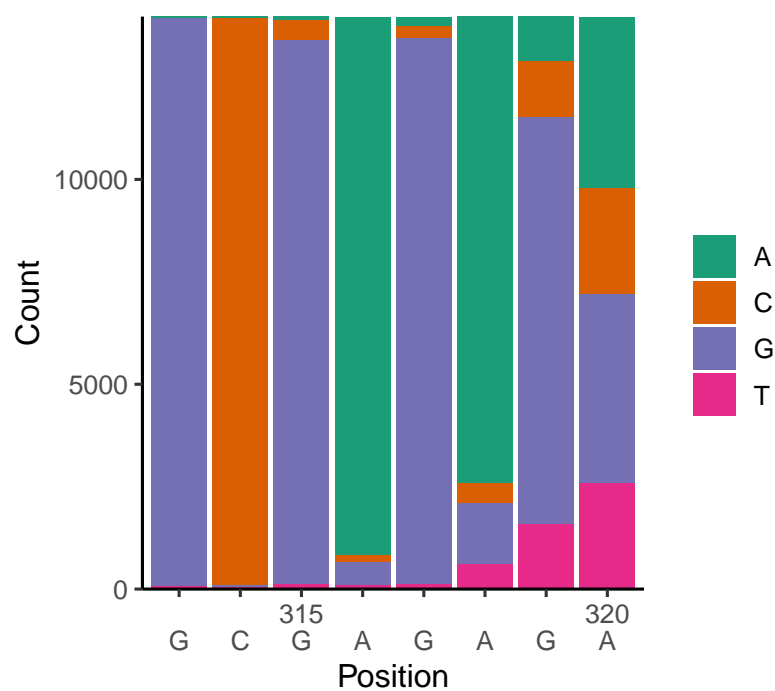
Gene IGHV4-39*02_C258G



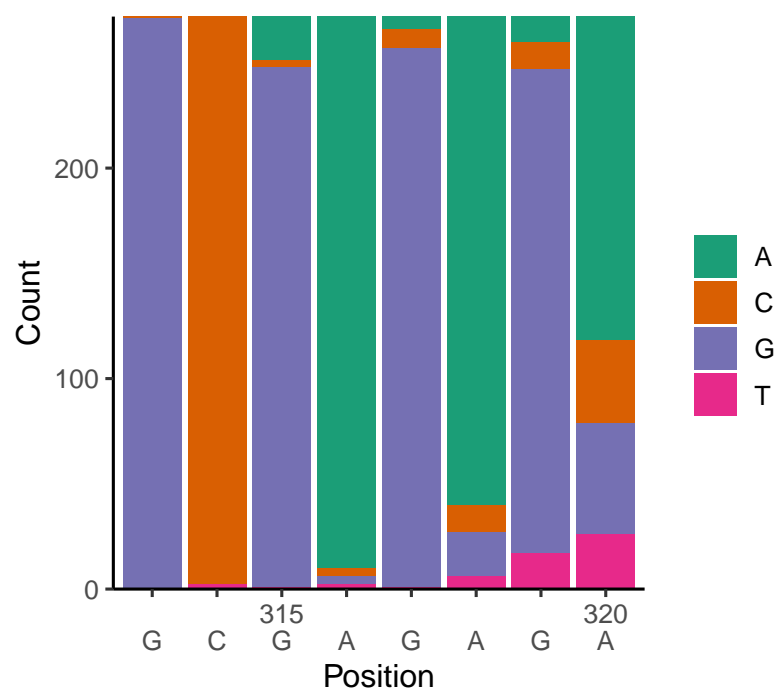
Gene IGHV3-30-3*02_G75C



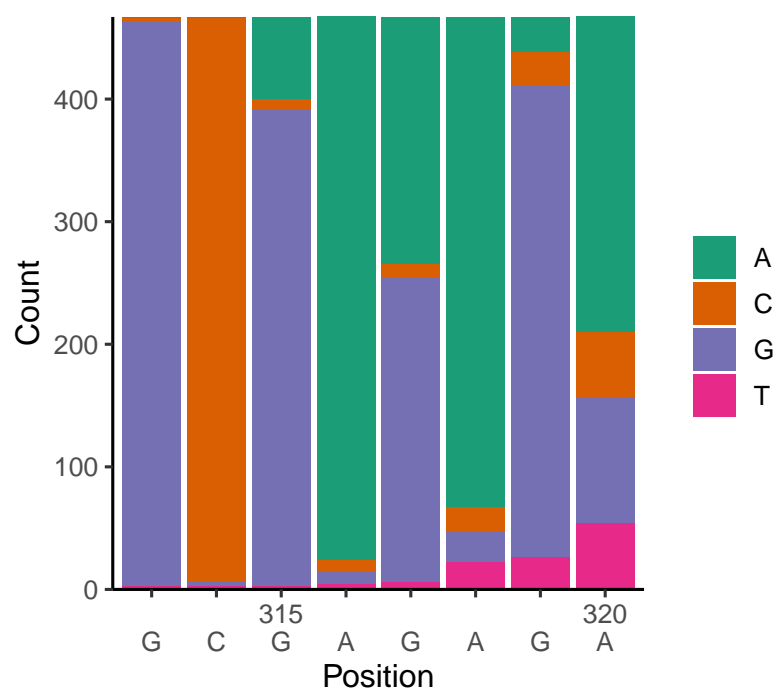
Gene IGHV4-59*01_G48A_G49C



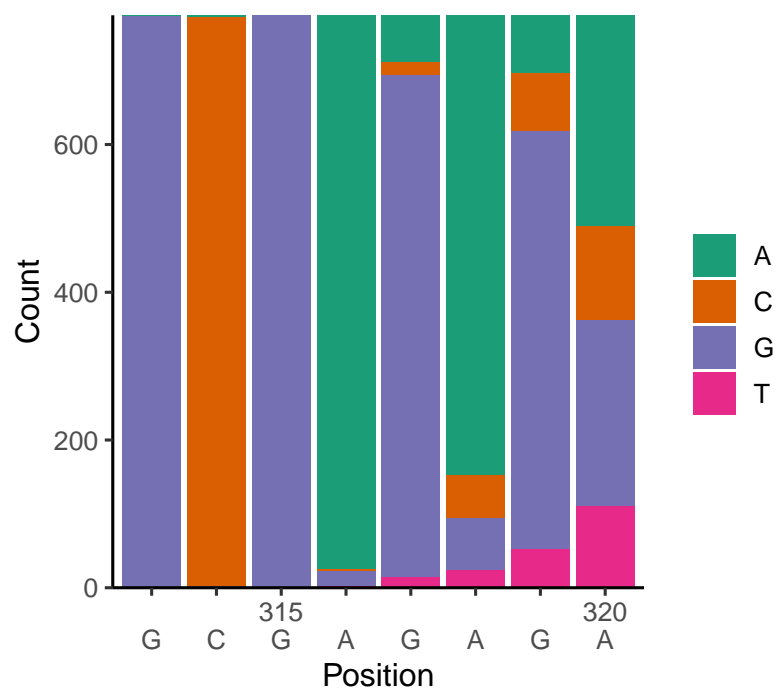
Gene IGHV3-53*02_T267G_C300T



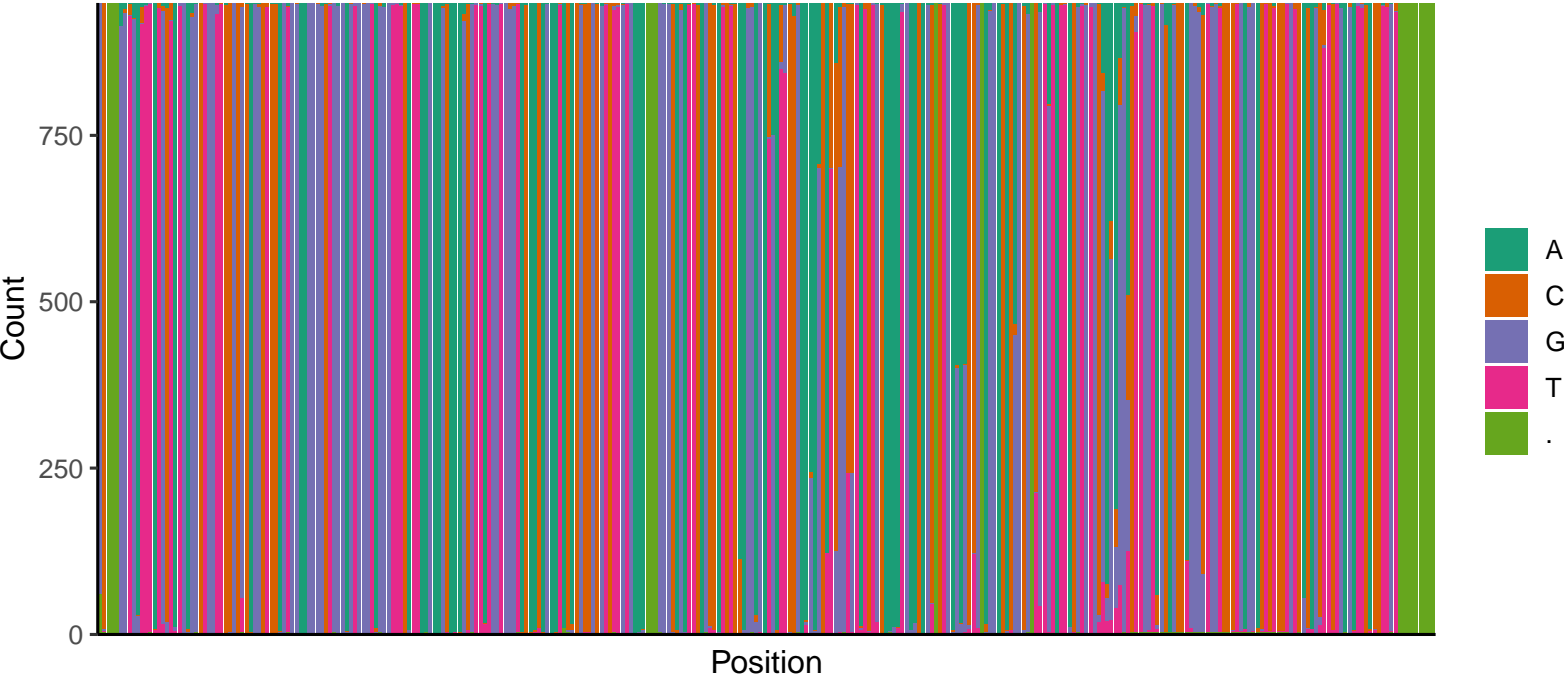
Gene IGHV3-53*05_T267G_C300T



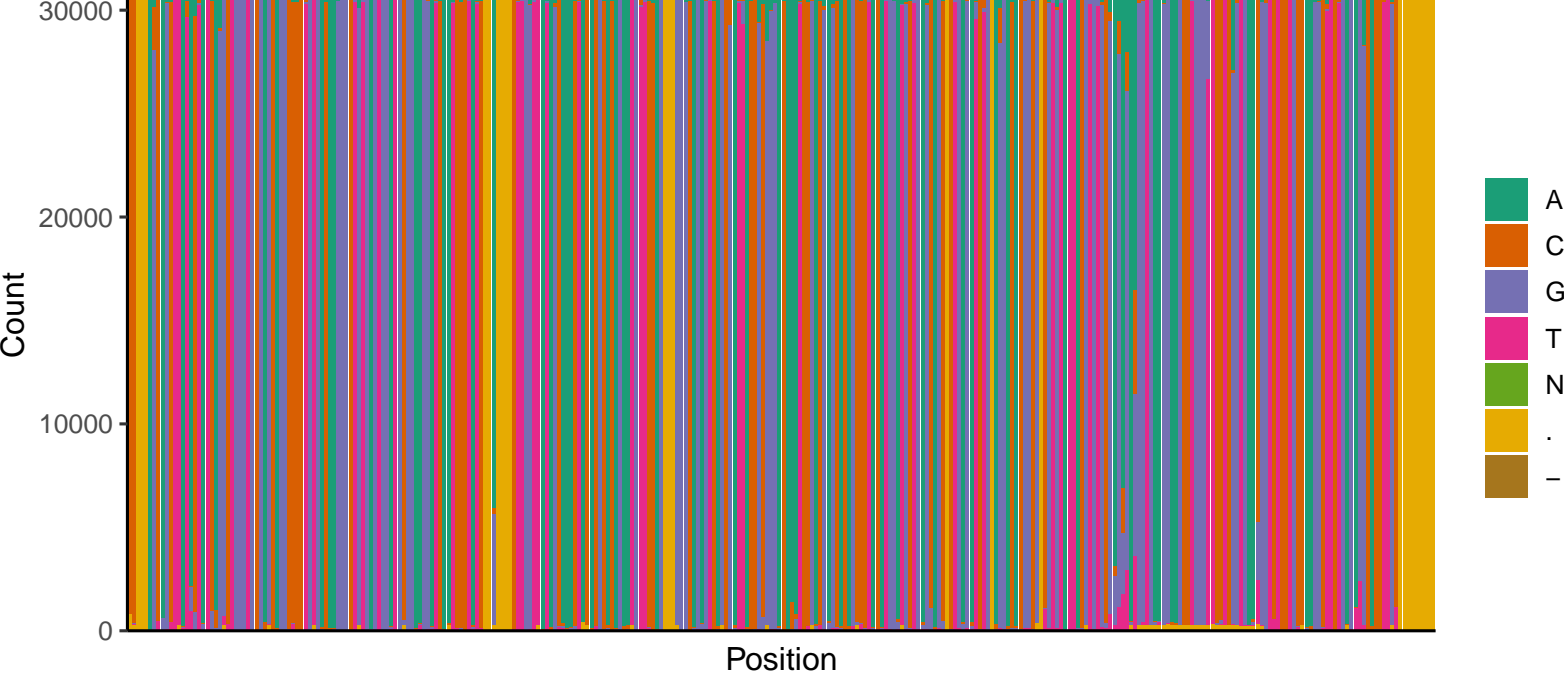
Gene IGHV6-1*01_A315G



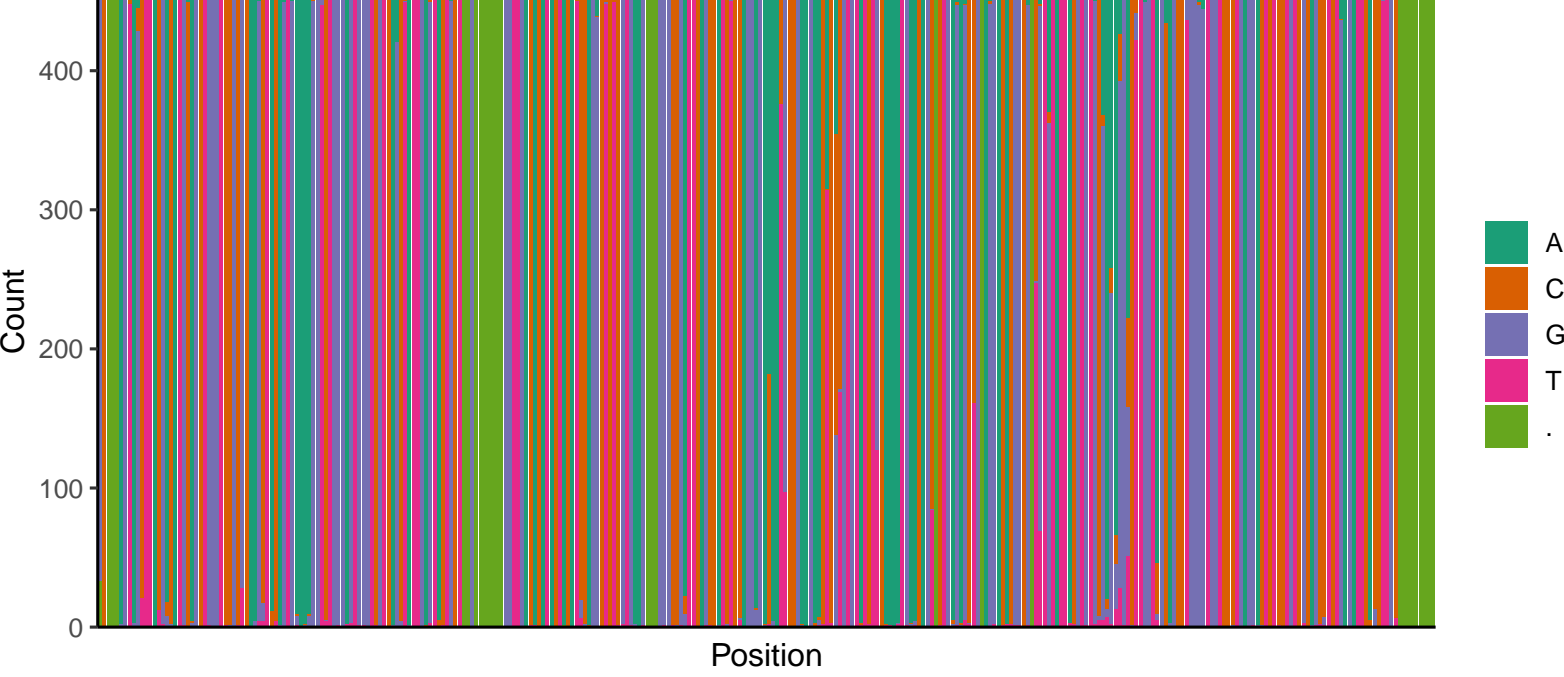
Gene IGHV3-49*03_A313G



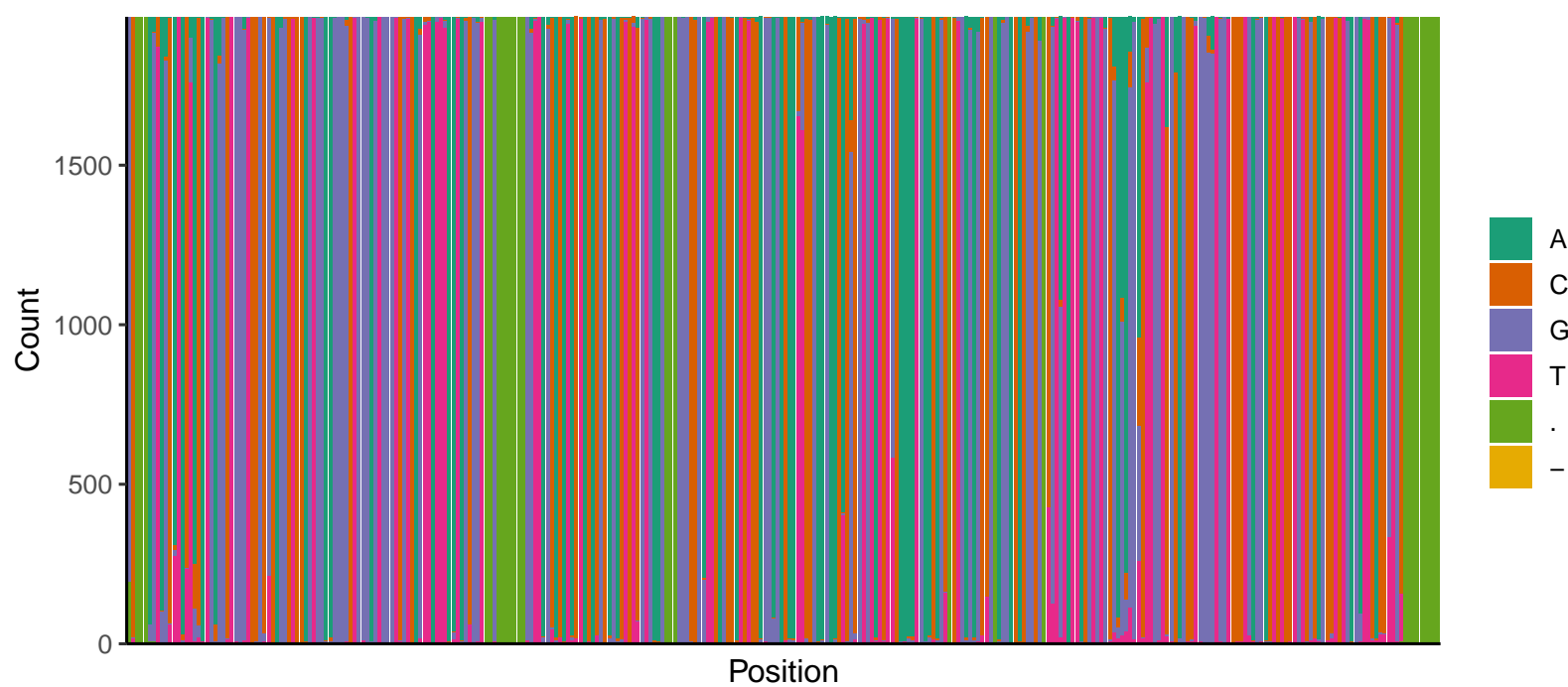
Gene IGHV1-69*08_C191T



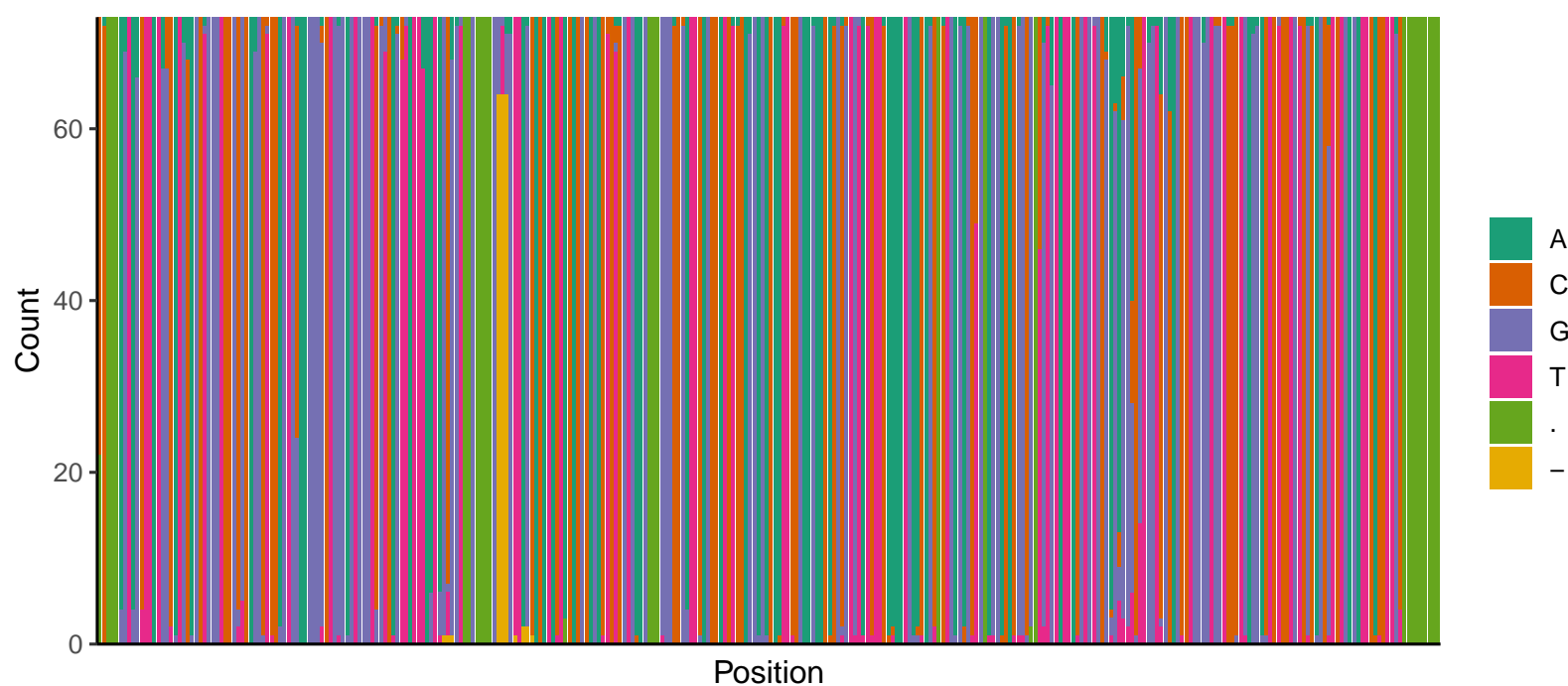
Gene IGHV3-13*01_G290A



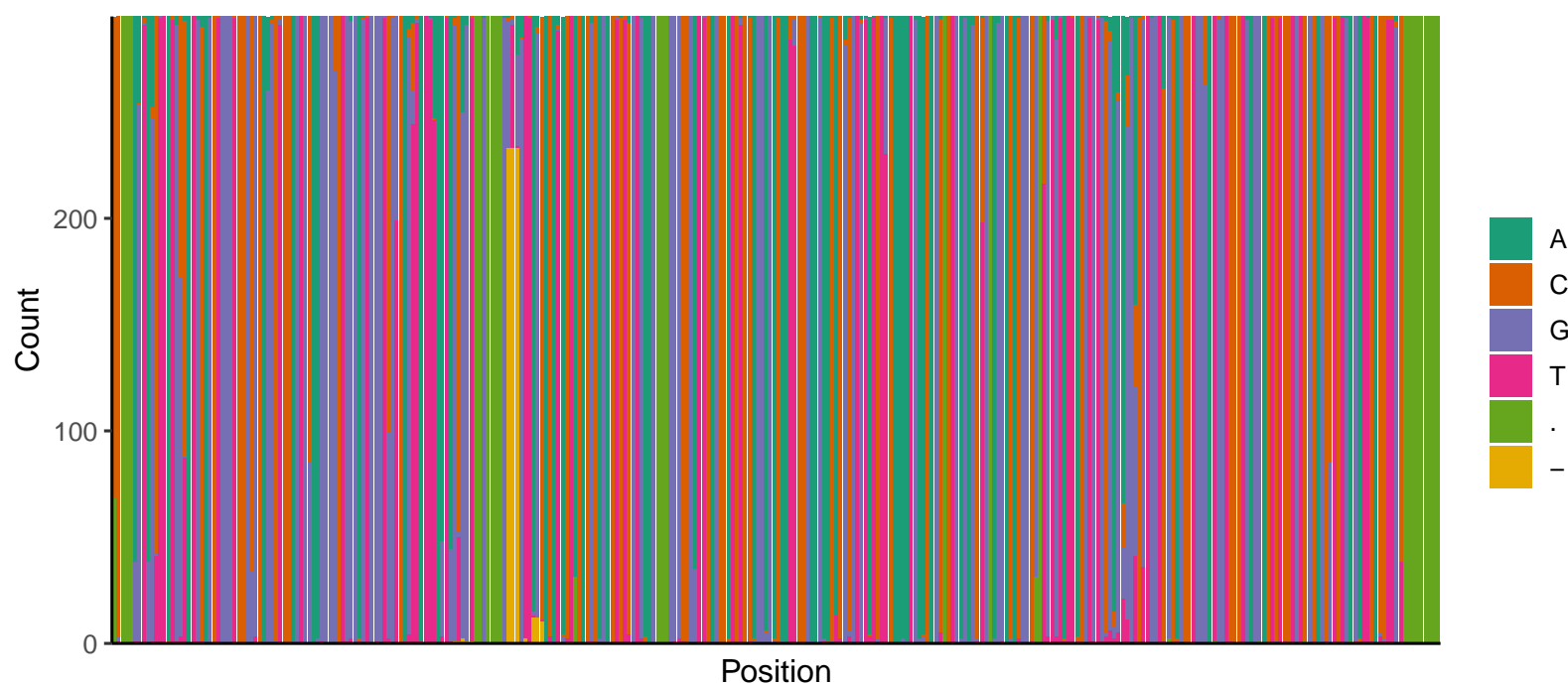
Gene IGHV3-66*01_A223C_T267G_T300C_G303A



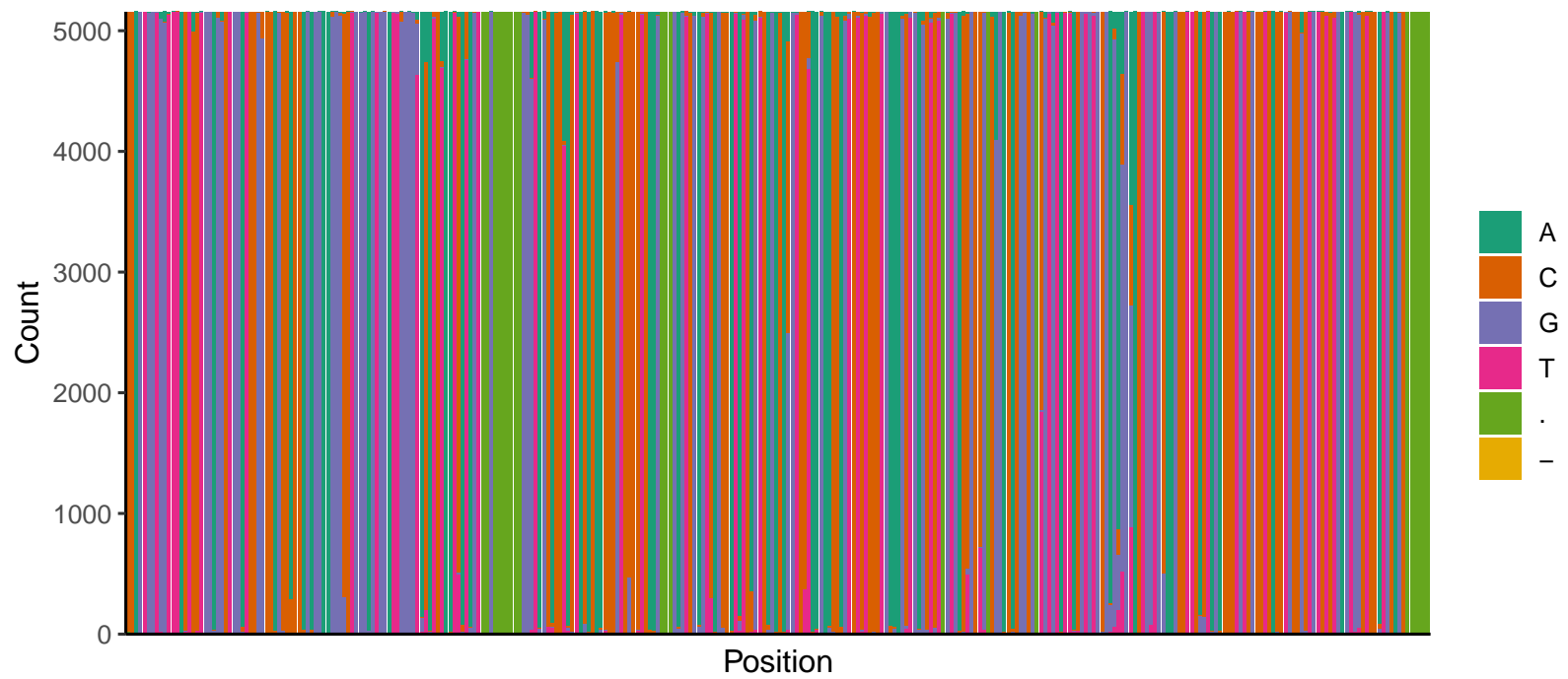
Gene IGHV3-NL1*01_T201C_G267T



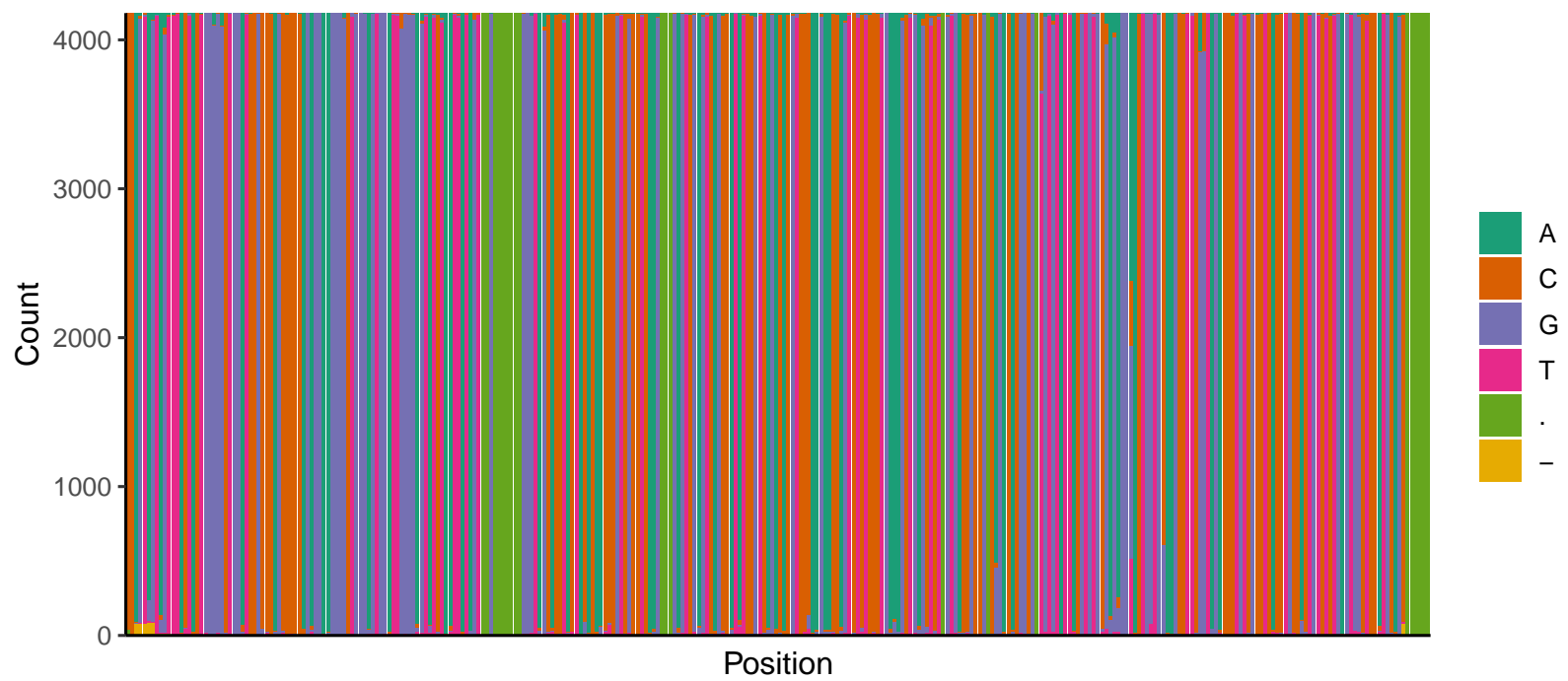
Gene IGHV3-NL1*01_G49A_T201C_G267T



Gene IGHV4-30-2*01_C315G



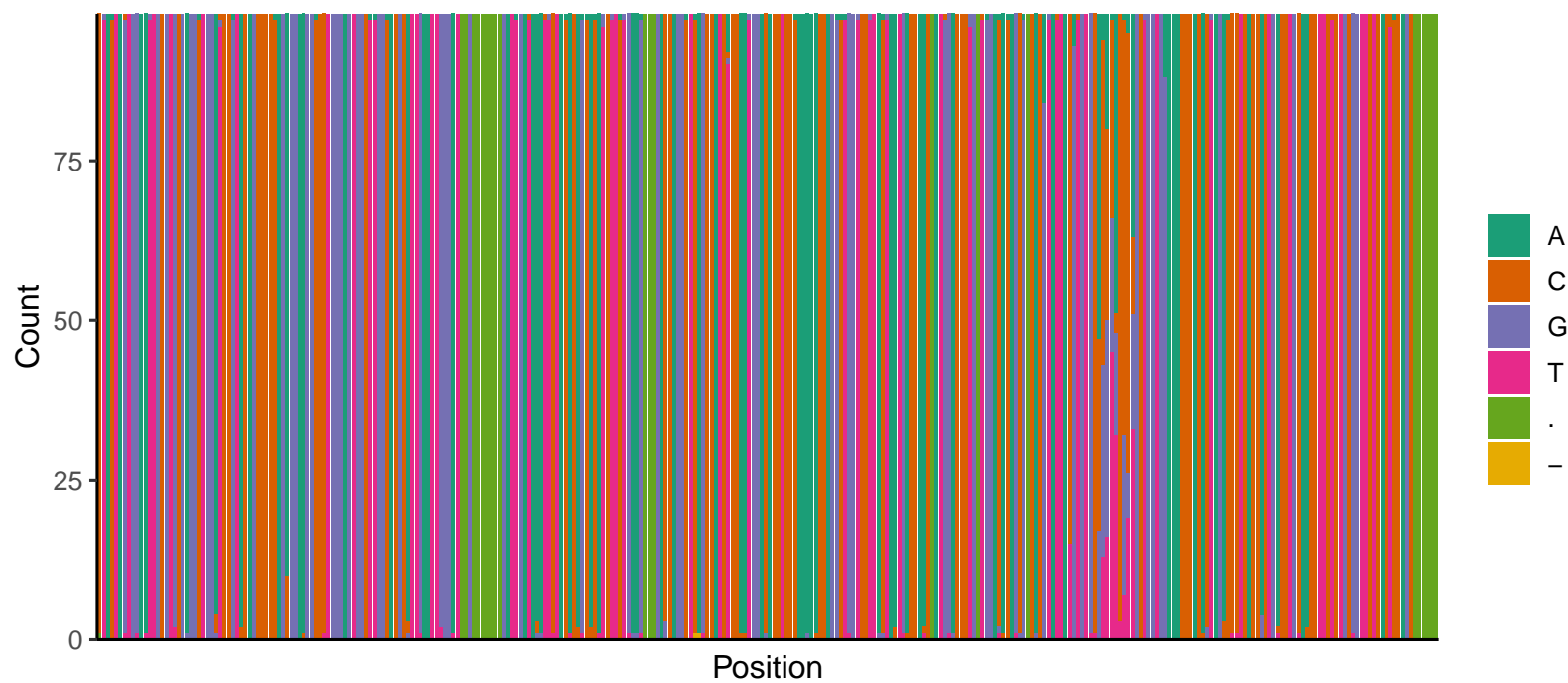
Gene IGHV4-39*02_C258G



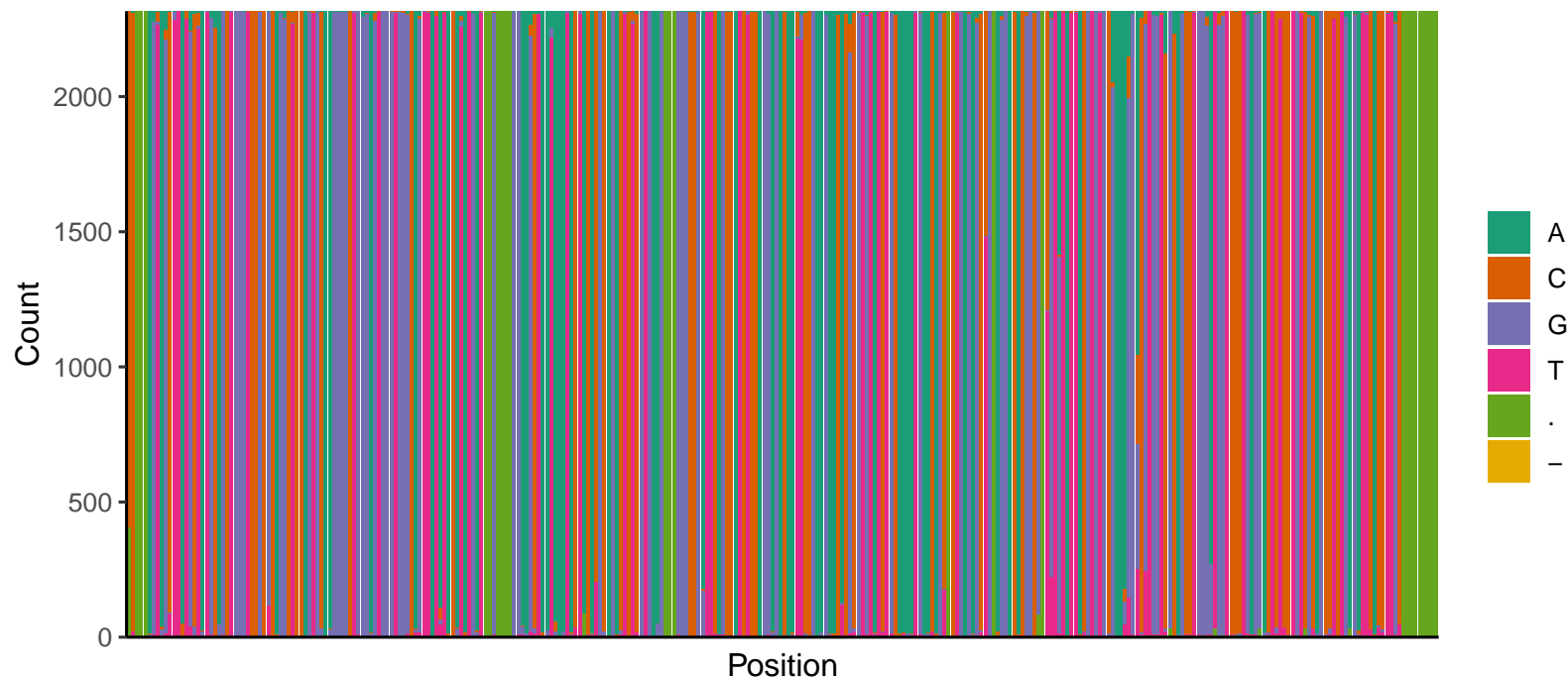
Gene IGHV4-59*01_G48A_G49C



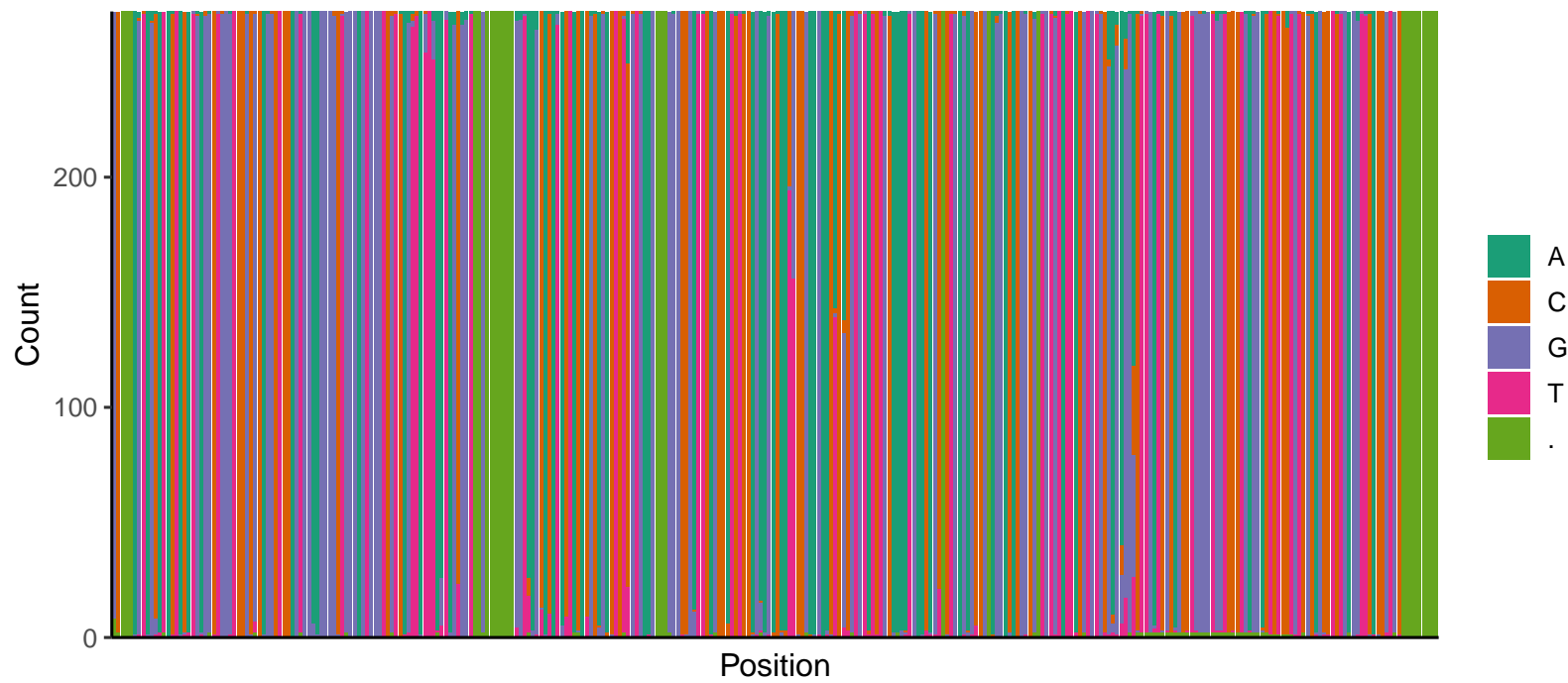
Gene IGHV2-70*04_T116C



Gene IGHV3-30-3*02_G75C



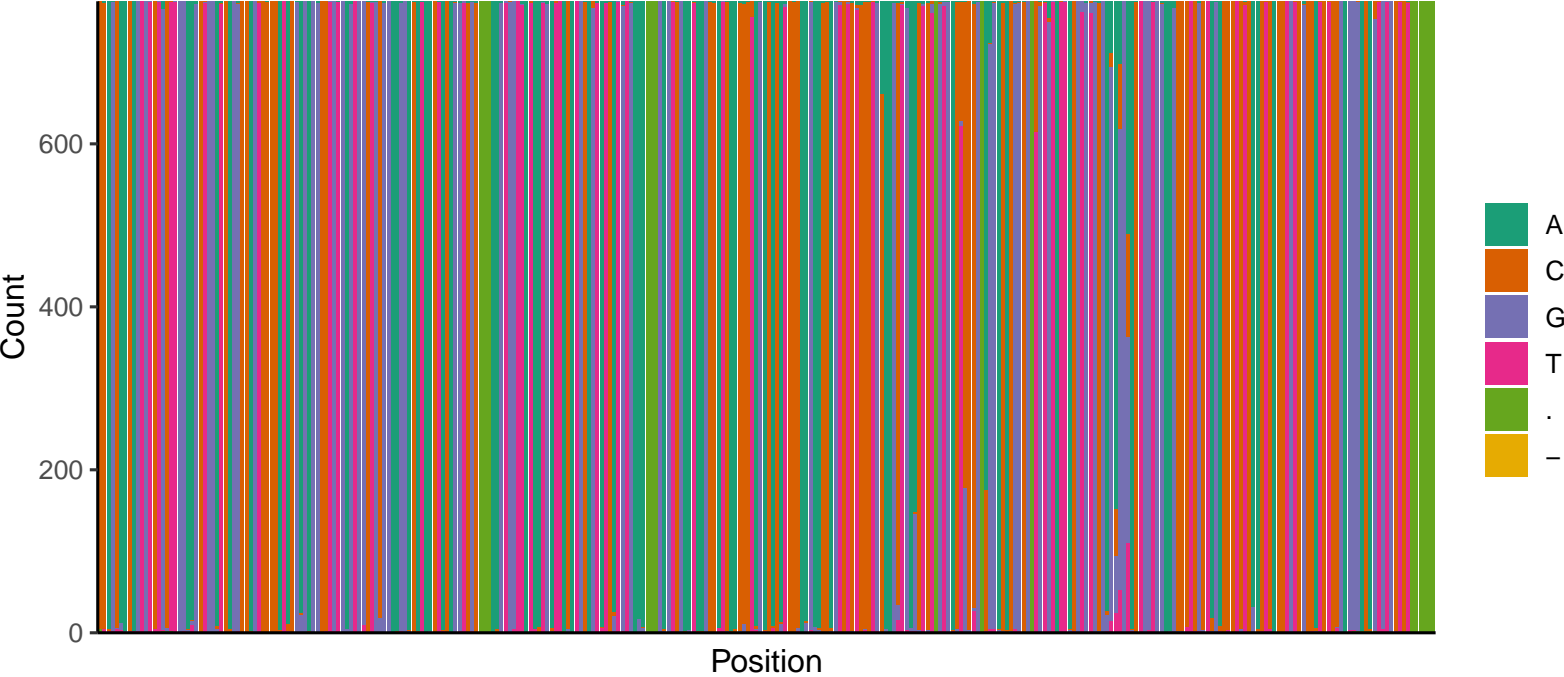
Gene IGHV3-53*02_T267G_C300T



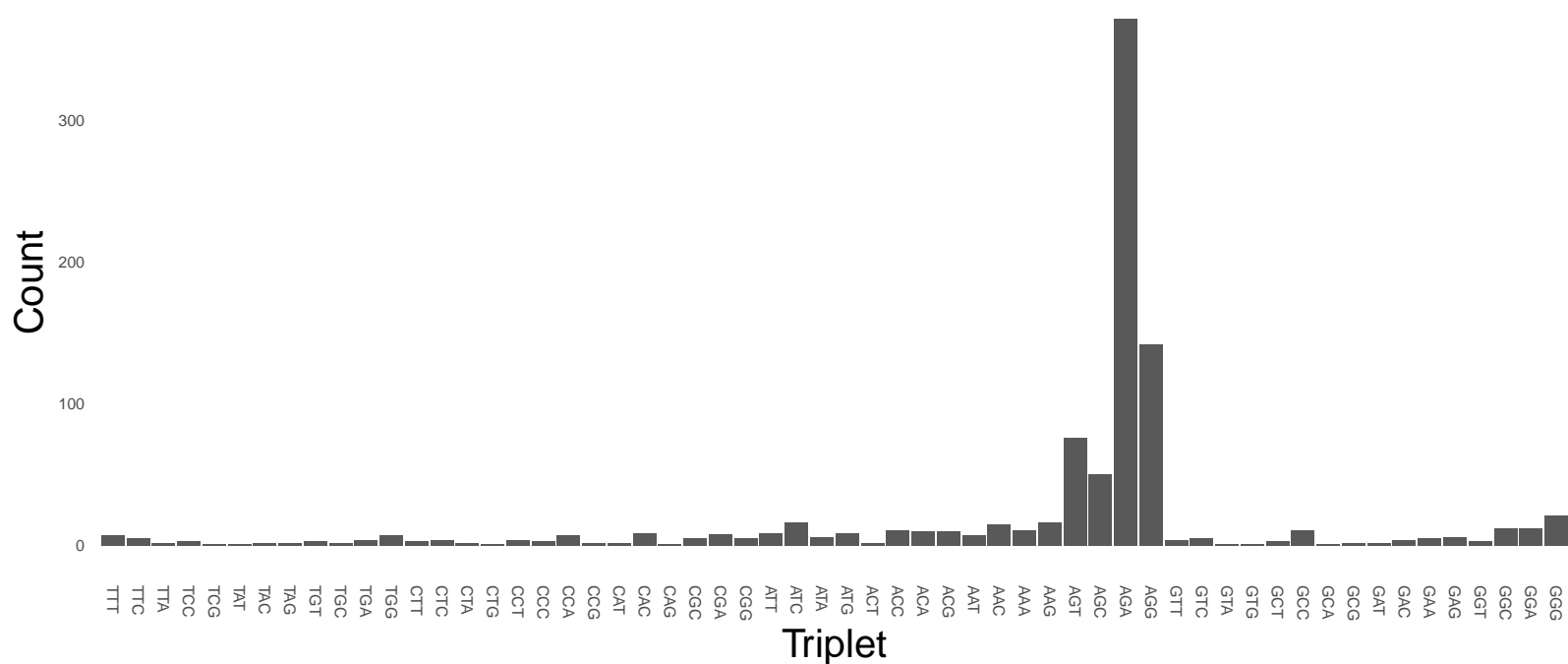
Gene IGHV3-53*05_T267G_C300T



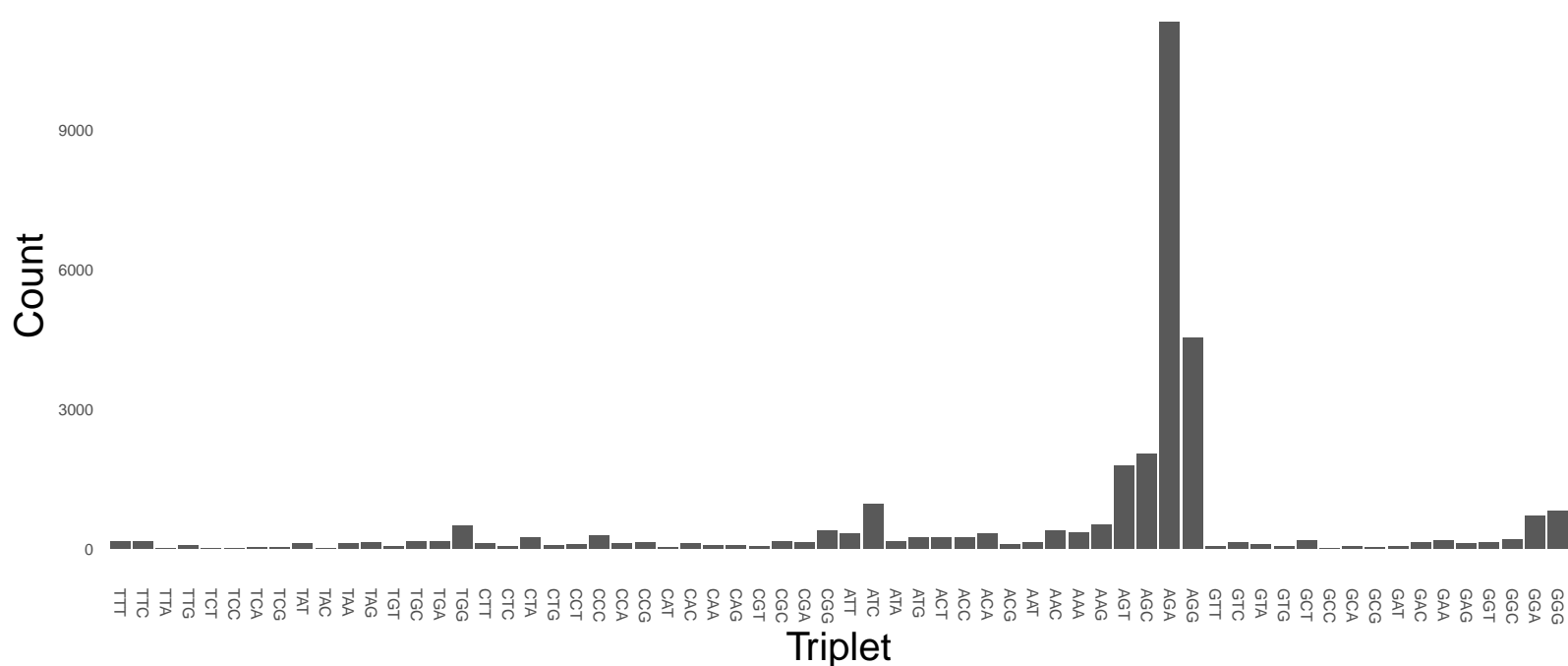
Gene IGHV6-1*01_A315G



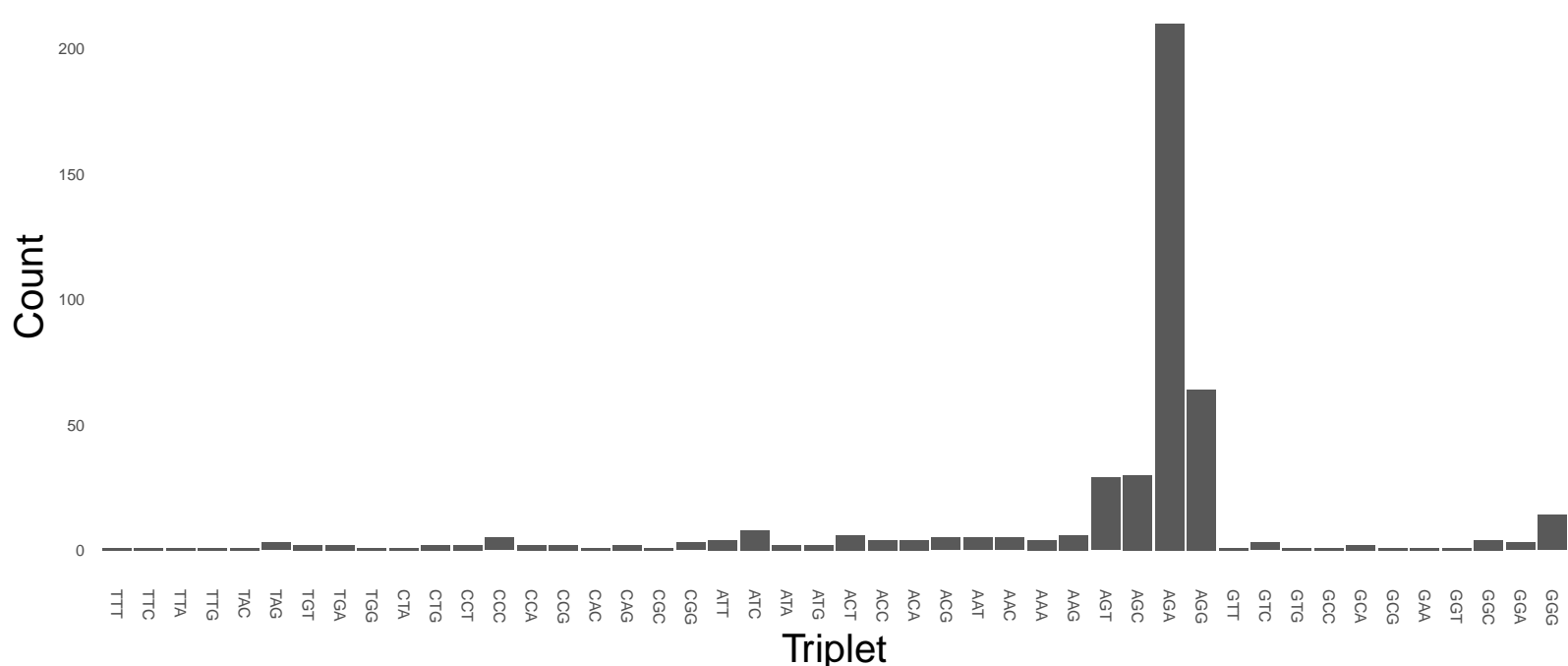
IGHV3–49*03_A313G– Final 3 nucleotides as a triplet



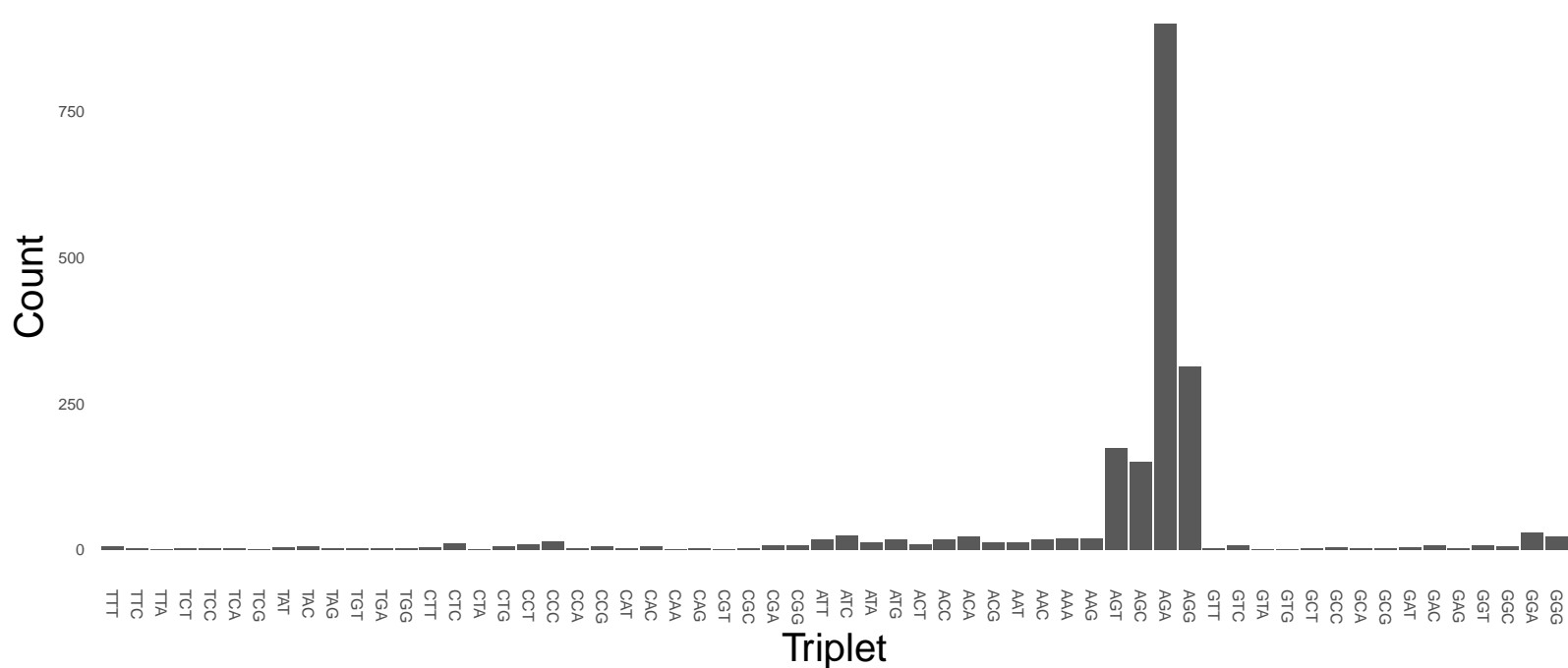
IGHV1–69*08_C191T– Final 3 nucleotides as a triplet



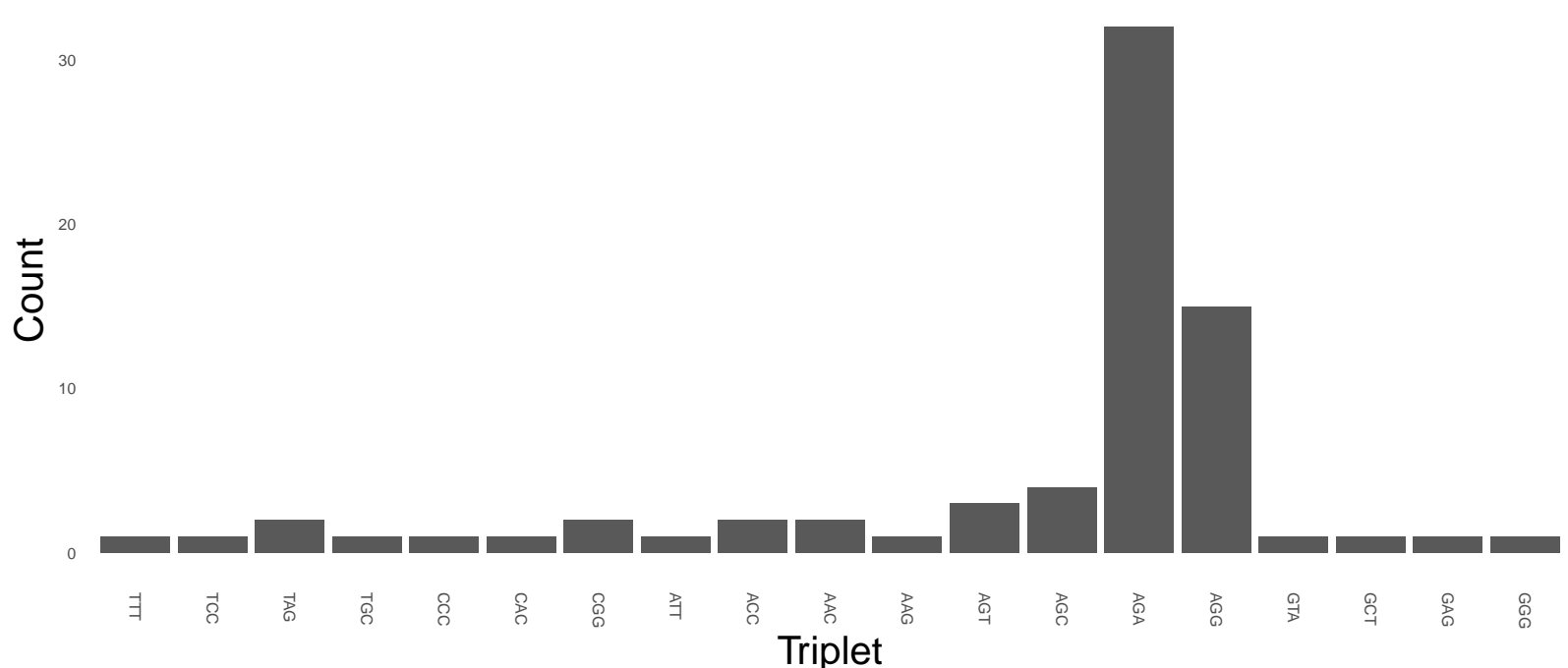
IGHV3–13*01_G290A– Final 3 nucleotides as a triplet



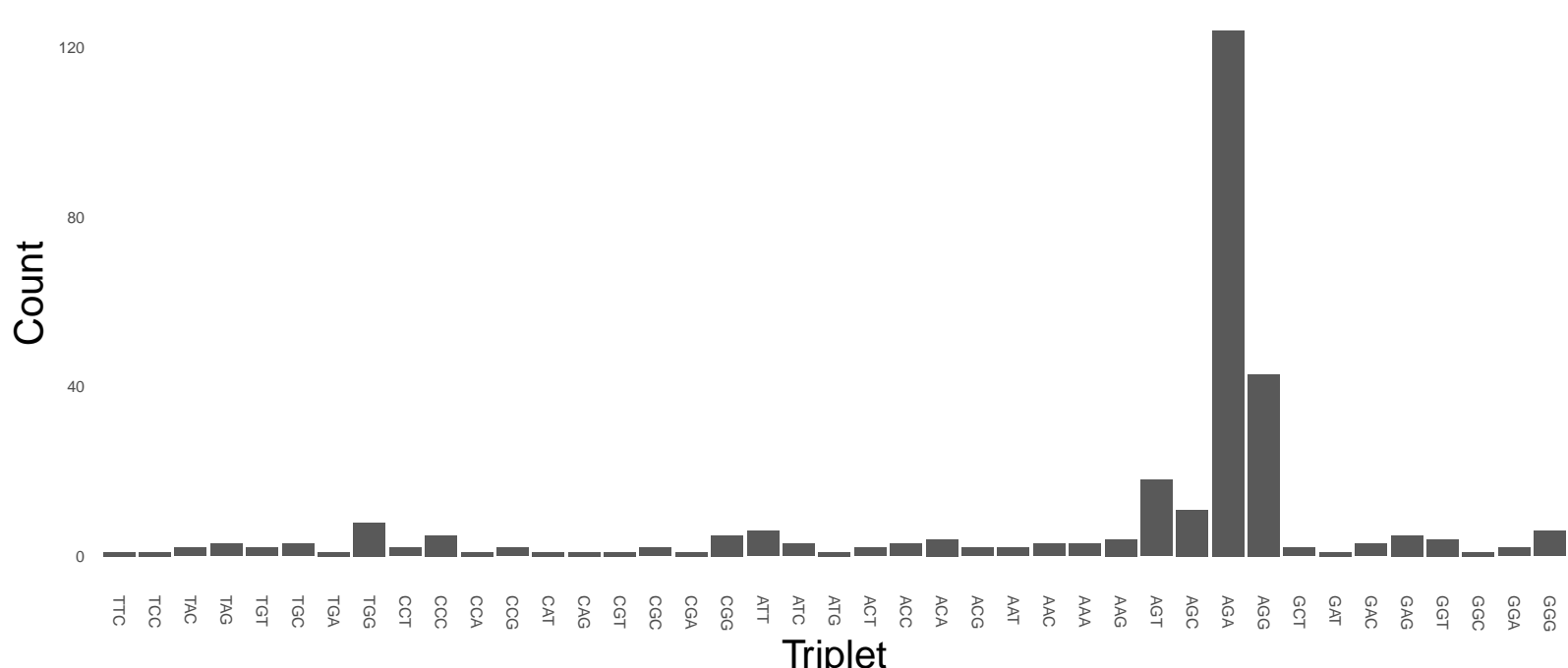
IGHV3-66*01_A223C_T267G_T300C_G303A- Final 3 nucleotides as a triplet



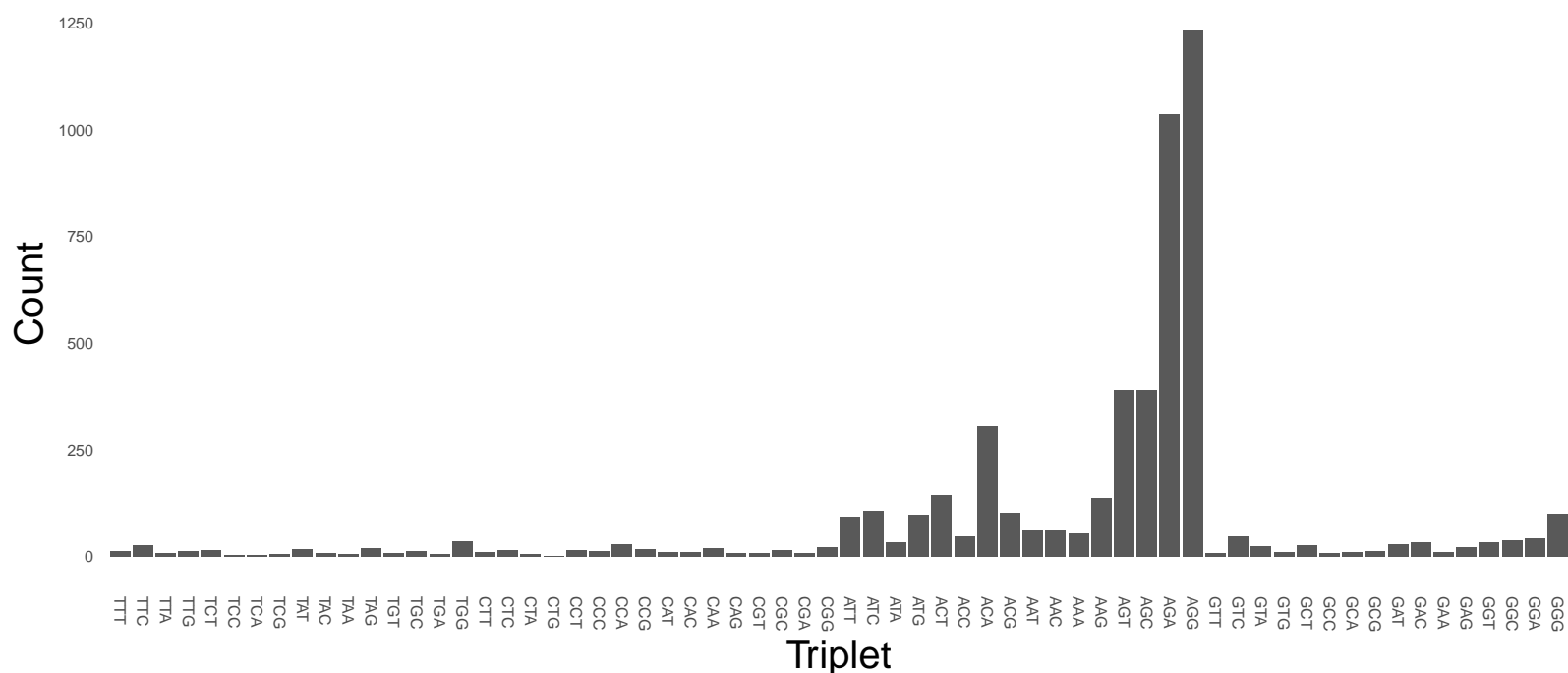
IGHV3-NL1*01_T201C_G267T- Final 3 nucleotides as a triplet



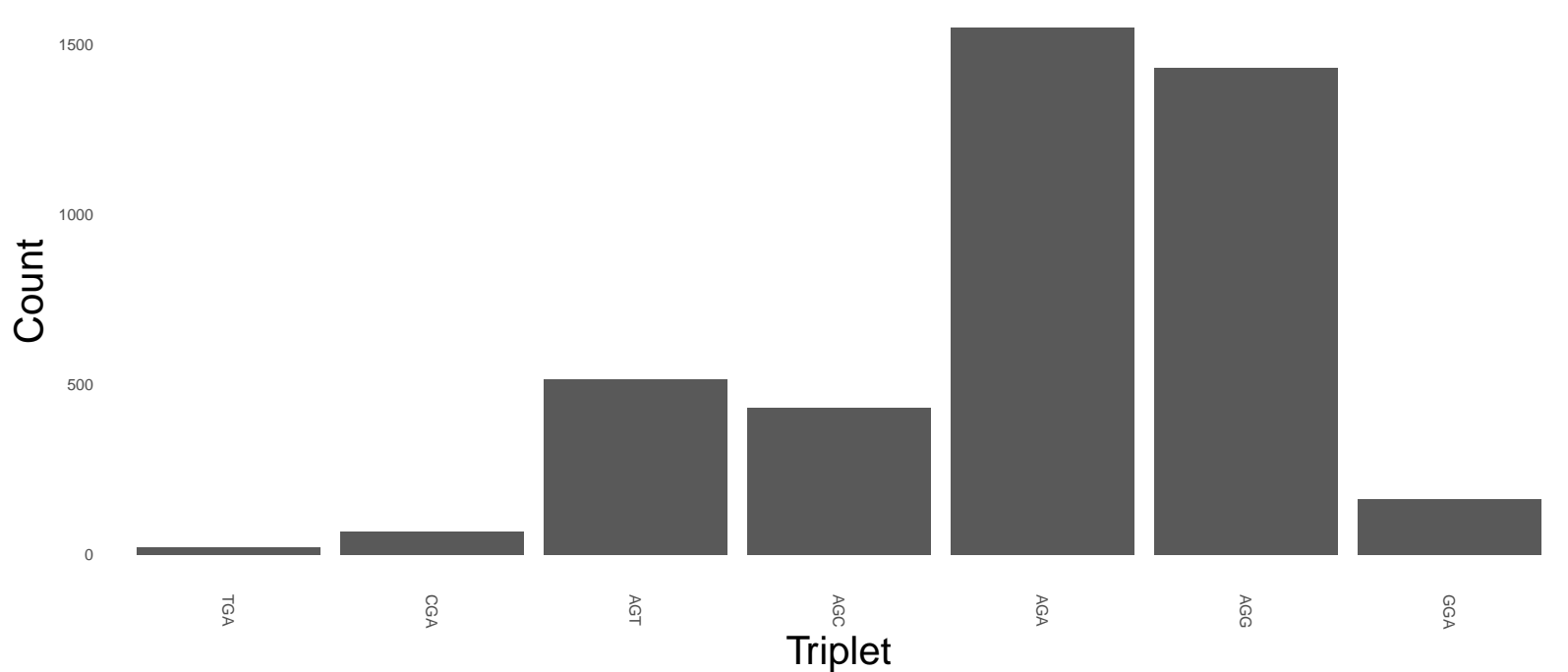
IGHV3-NL1*01_G49A_T201C_G267T- Final 3 nucleotides as a triplet



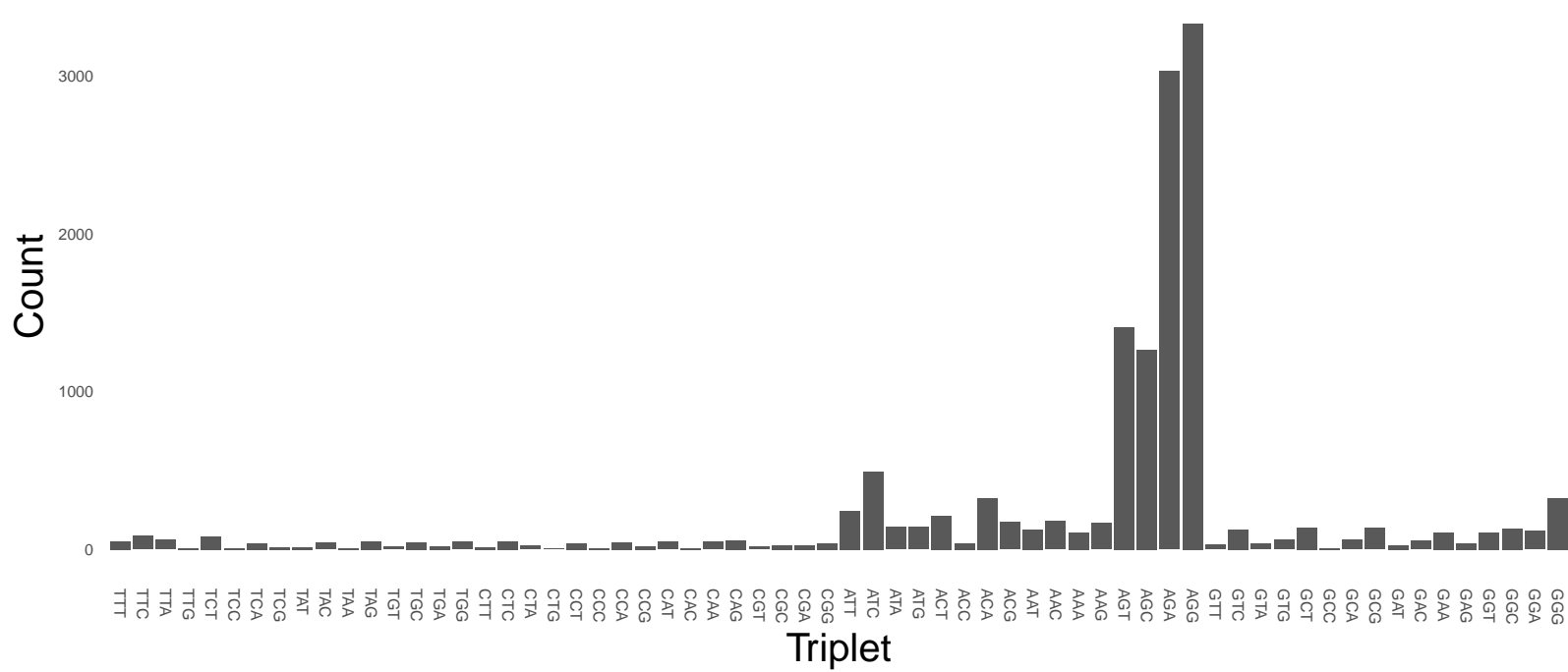
IGHV4-30-2*01_C315G- Final 3 nucleotides as a triplet



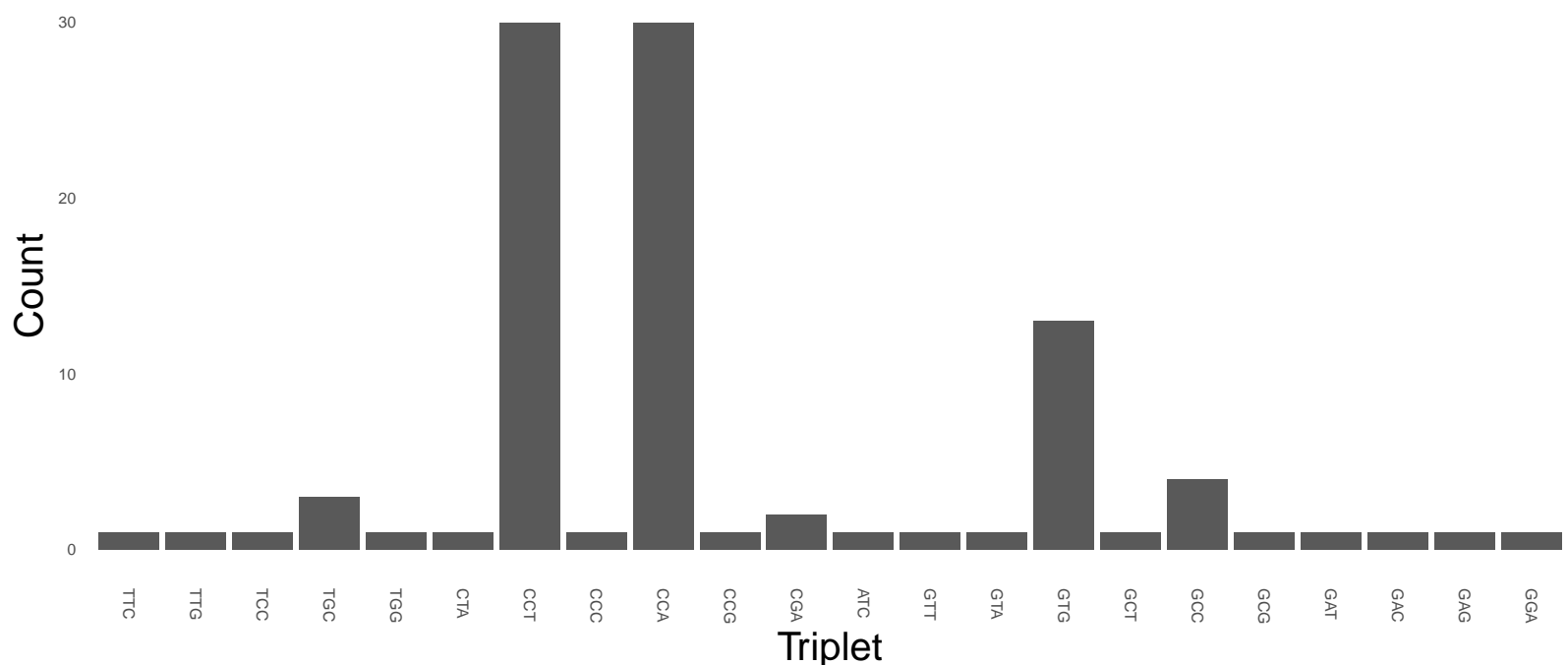
IGHV4-39*02_C258G- Final 3 nucleotides as a triplet



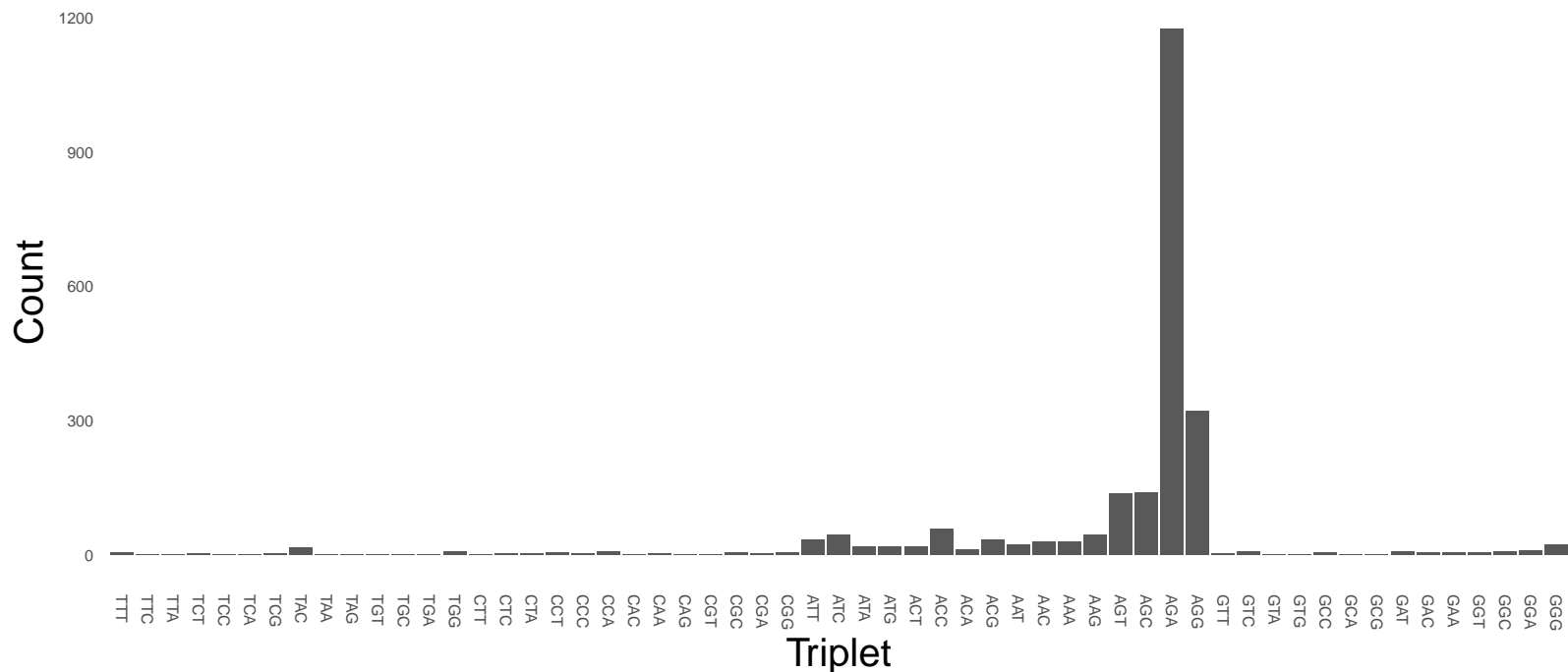
IGHV4-59*01_G48A_G49C- Final 3 nucleotides as a triplet



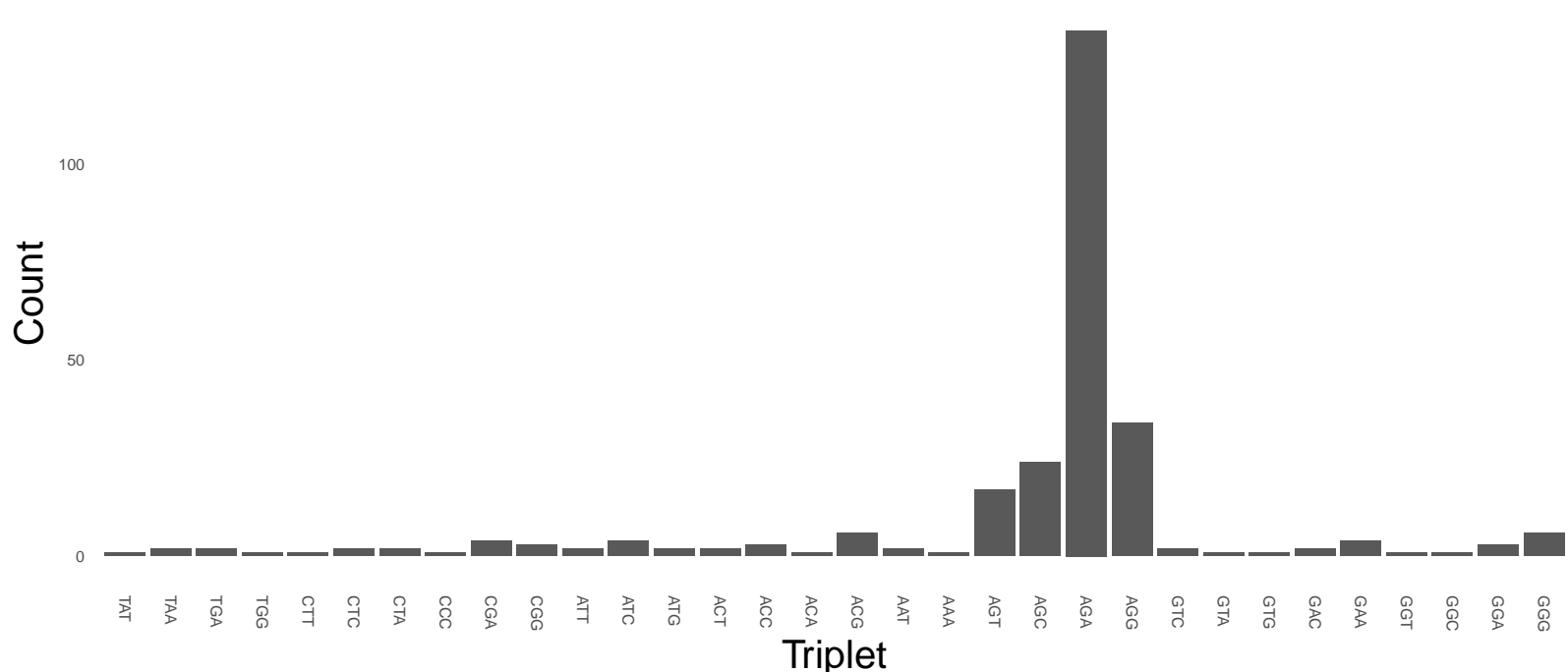
IGHV2-70*04_T116C- Final 3 nucleotides as a triplet



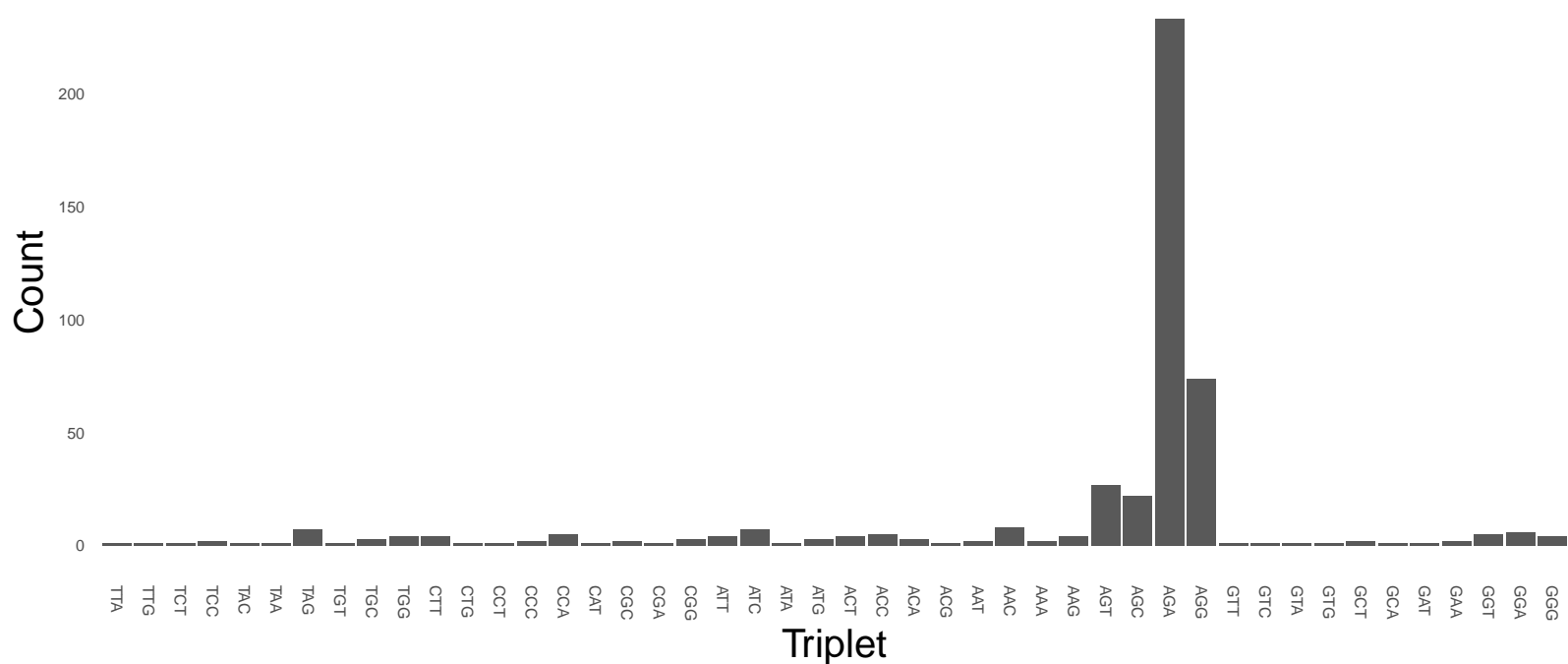
IGHV3-30-3*02_G75C- Final 3 nucleotides as a triplet



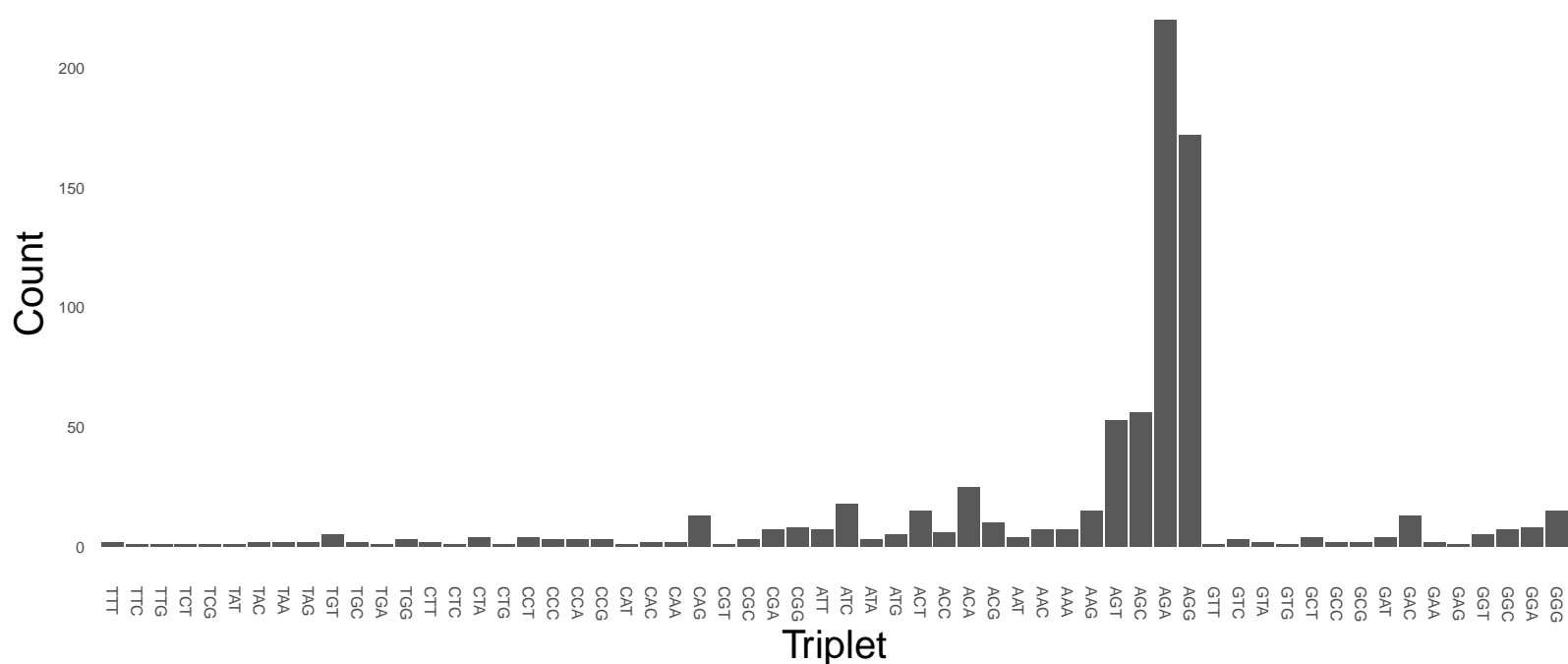
IGHV3-53*02_T267G_C300T- Final 3 nucleotides as a triplet



IGHV3–53*05_T267G_C300T– Final 3 nucleotides as a triplet

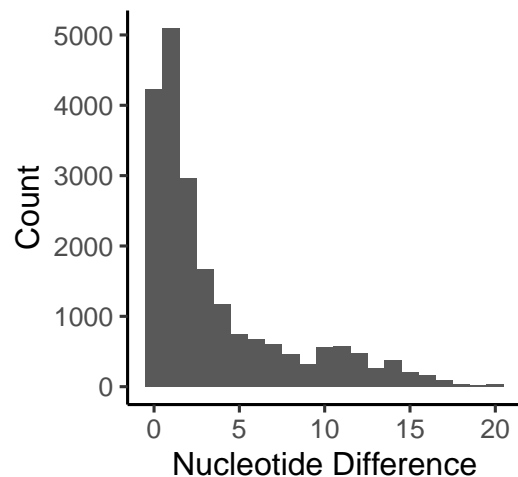


IGHV6–1*01_A315G– Final 3 nucleotides as a triplet



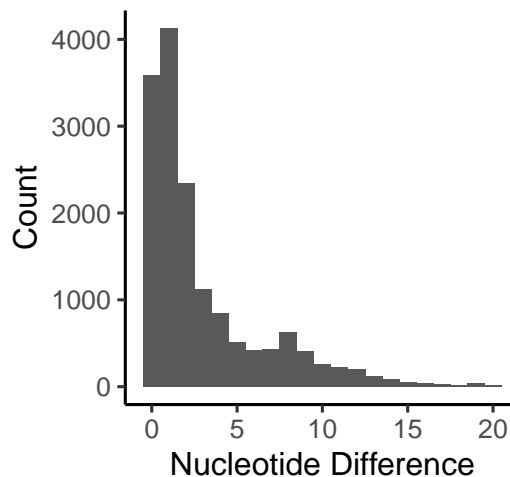
IGHV1-2*02

20984 sequences assigned
4227 (20.1%) exact matches, in which:
3453 unique CDR3
7 unique J



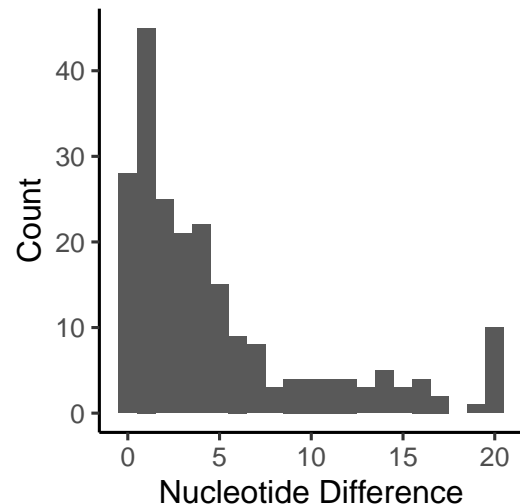
IGHV1-8*01

15616 sequences assigned
3589 (23%) exact matches, in which:
3045 unique CDR3
7 unique J



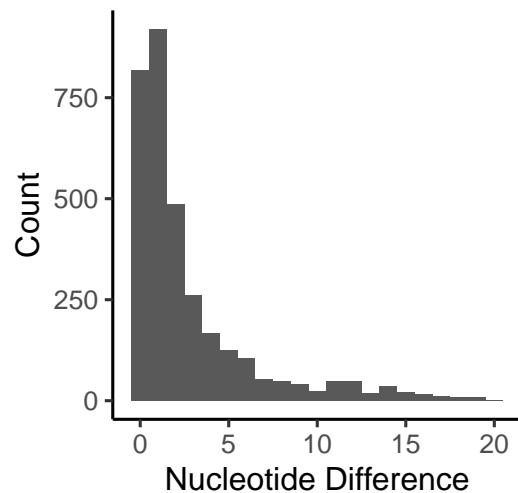
IGHV1-45*02

226 sequences assigned
28 (12.4%) exact matches, in which:
24 unique CDR3
6 unique J



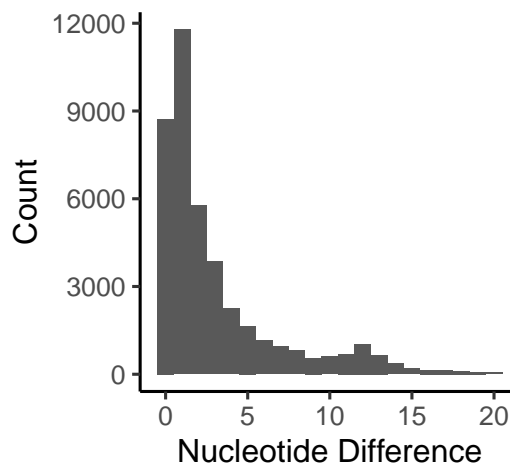
IGHV1-2*04

3305 sequences assigned
817 (24.7%) exact matches, in which:
664 unique CDR3
7 unique J



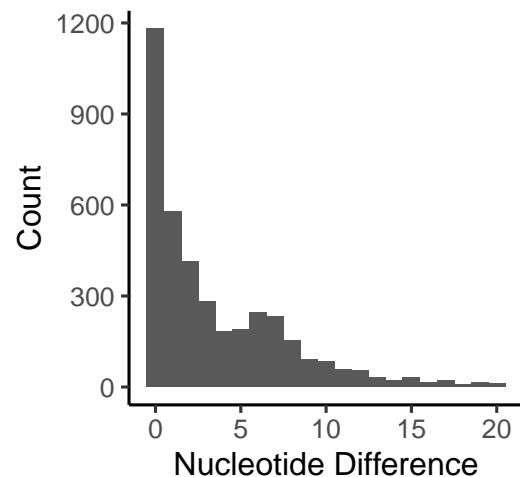
IGHV1-18*01

41998 sequences assigned
8724 (20.8%) exact matches, in which:
7000 unique CDR3
7 unique J



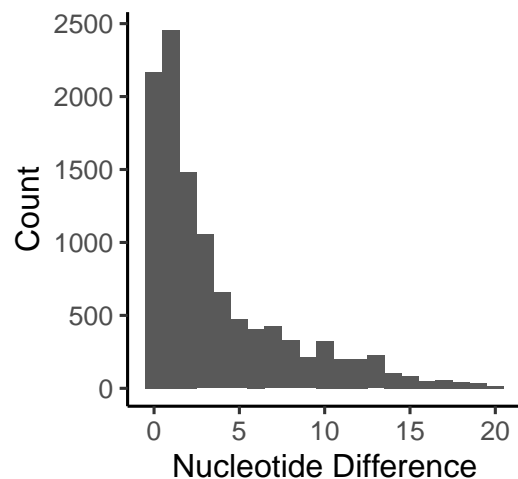
IGHV1-46*01

3979 sequences assigned
1181 (29.7%) exact matches, in which:
1162 unique CDR3
7 unique J



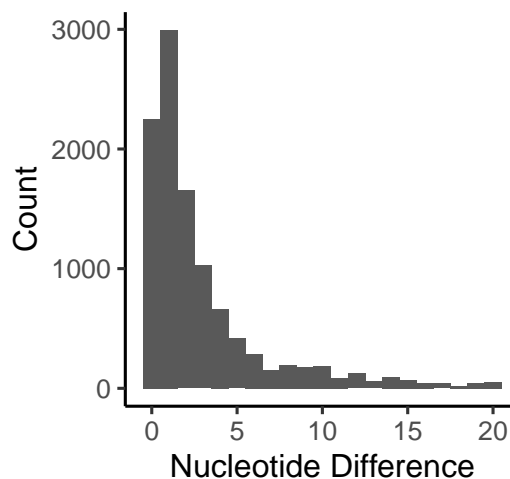
IGHV1-3*01

11173 sequences assigned
2169 (19.4%) exact matches, in which:
1812 unique CDR3
7 unique J



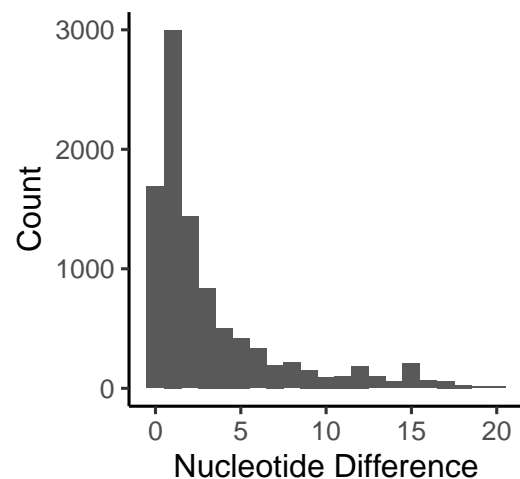
IGHV1-24*01

10920 sequences assigned
2250 (20.6%) exact matches, in which:
1830 unique CDR3
7 unique J



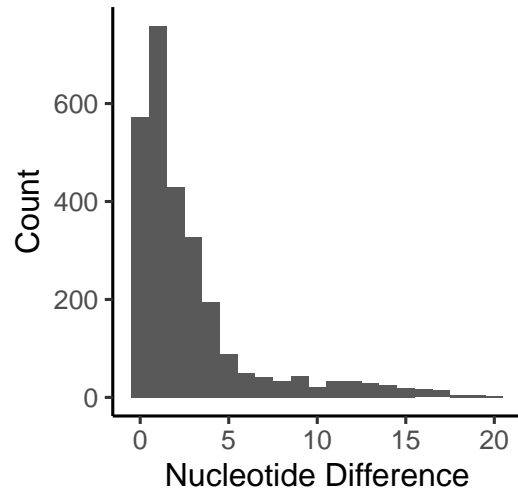
IGHV1-46*03

9856 sequences assigned
1689 (17.1%) exact matches, in which:
1260 unique CDR3
7 unique J



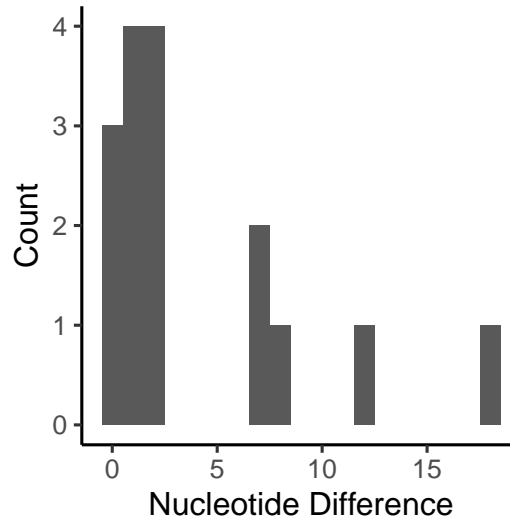
IGHV1-58*02

2771 sequences assigned
573 (20.7%) exact matches, in which:
445 unique CDR3
6 unique J



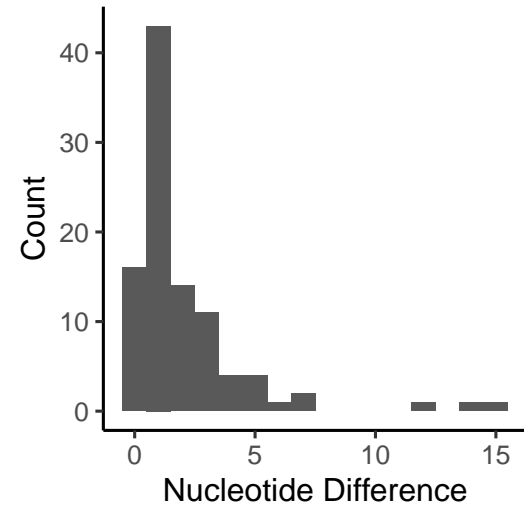
IGHV1-69D*01

16 sequences assigned
3 (18.8%) exact matches, in which:
3 unique CDR3
2 unique J



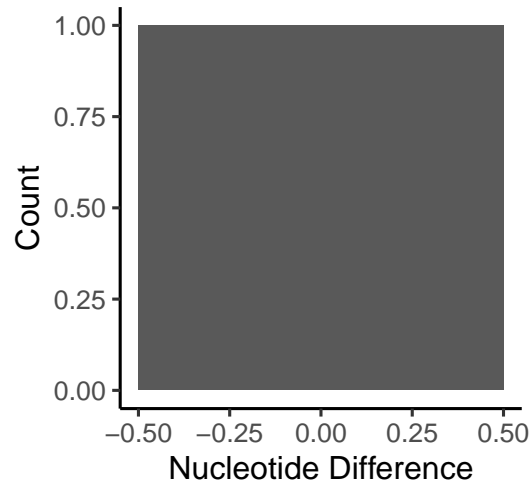
IGHV2-70*04_T116C

98 sequences assigned
16 (16.3%) exact matches, in which:
11 unique CDR3
4 unique J



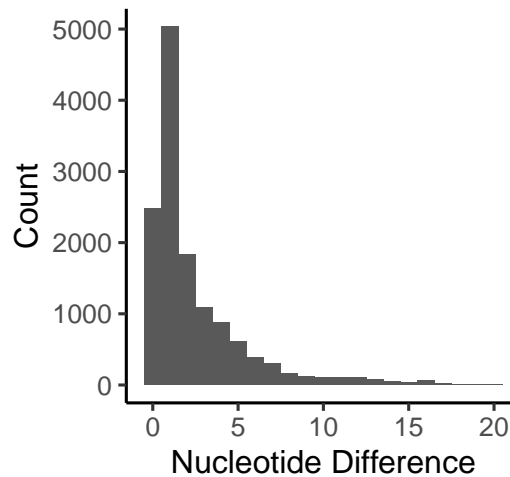
IGHV1-69-2*01

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



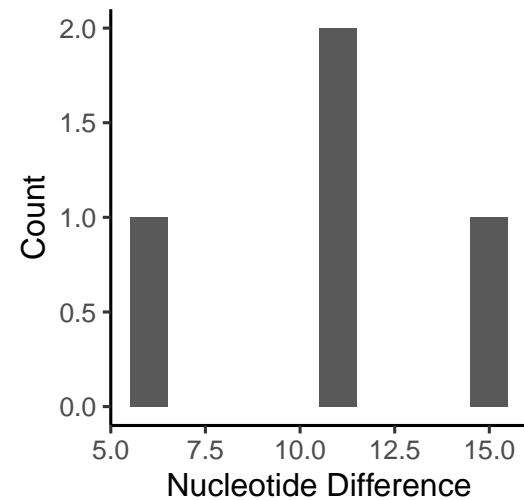
IGHV2-5*02

13725 sequences assigned
2485 (18.1%) exact matches, in which:
1915 unique CDR3
7 unique J



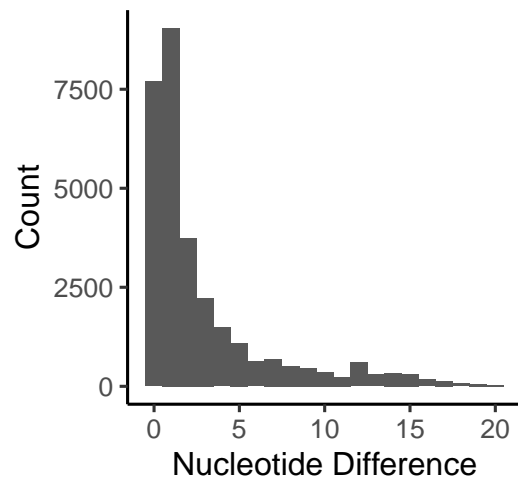
IGHV2-70D*04

4 sequences assigned
No exact matches.



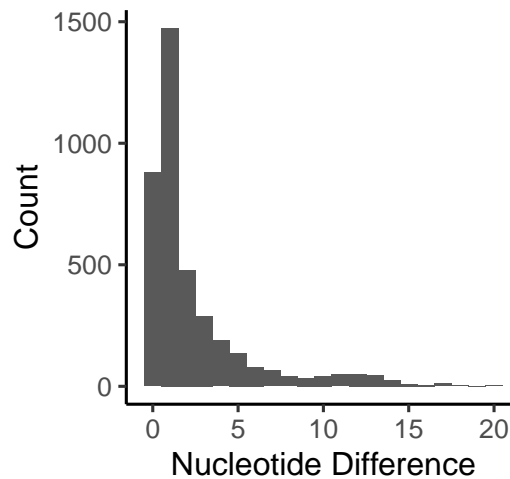
IGHV1-69*08_C191T

30527 sequences assigned
7700 (25.2%) exact matches, in which:
6195 unique CDR3
7 unique J



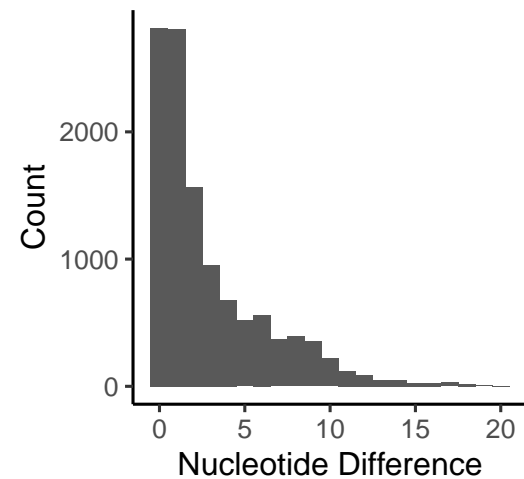
IGHV2-26*01

4058 sequences assigned
880 (21.7%) exact matches, in which:
728 unique CDR3
7 unique J



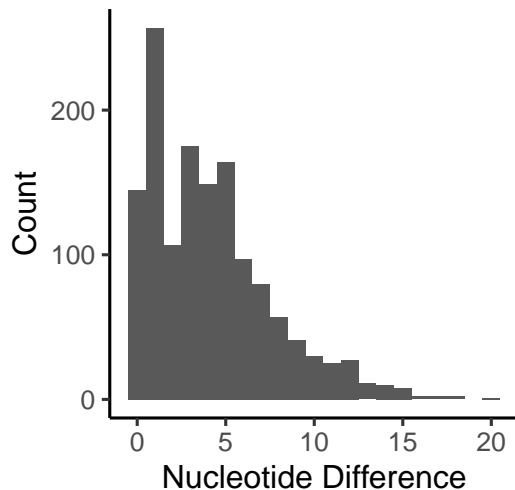
IGHV3-7*01

11771 sequences assigned
2816 (23.9%) exact matches, in which:
2392 unique CDR3
7 unique J



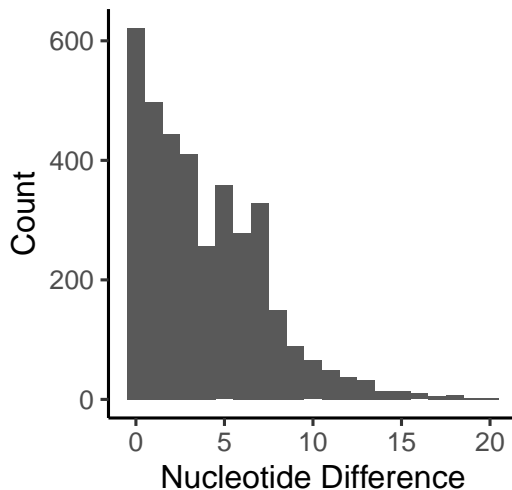
IGHV3-7*03

1407 sequences assigned
145 (10.3%) exact matches, in which:
145 unique CDR3
7 unique J



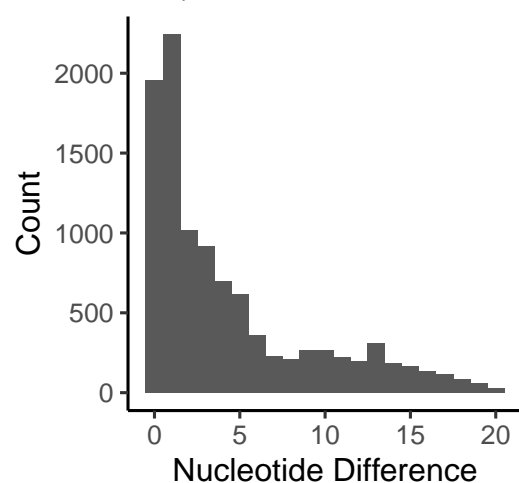
IGHV3-11*04

3773 sequences assigned
622 (16.5%) exact matches, in which:
615 unique CDR3
7 unique J



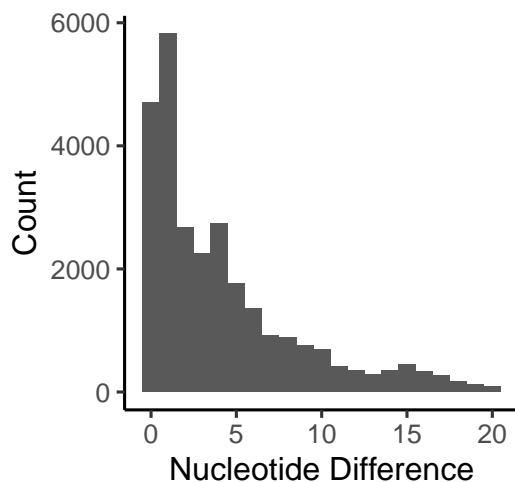
IGHV3-15*01

10541 sequences assigned
1959 (18.6%) exact matches, in which:
1543 unique CDR3
7 unique J



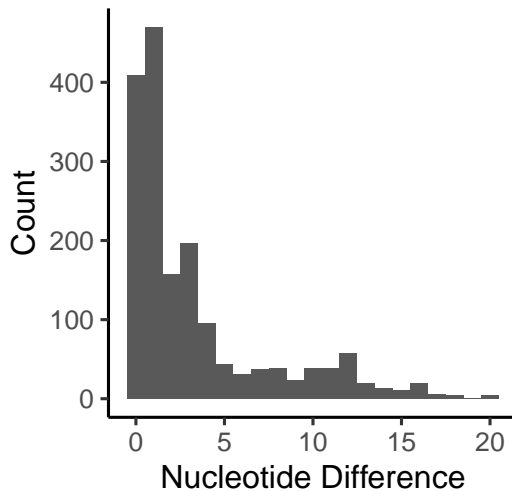
IGHV3-9*01

27773 sequences assigned
4707 (16.9%) exact matches, in which:
3642 unique CDR3
7 unique J



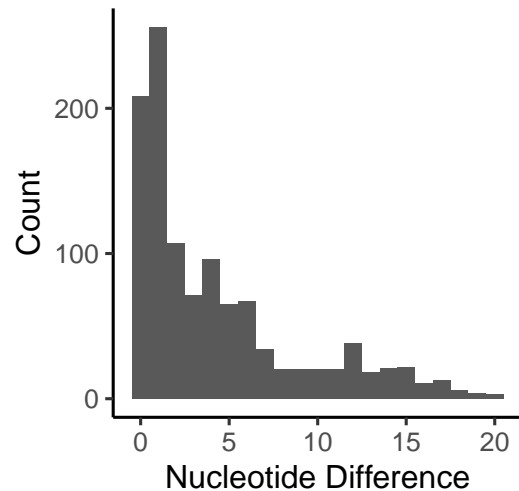
IGHV3-13*01

1730 sequences assigned
409 (23.6%) exact matches, in which:
328 unique CDR3
7 unique J



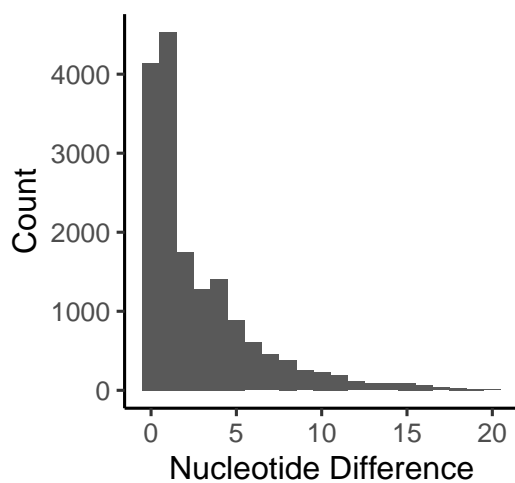
IGHV3-20*01

1132 sequences assigned
208 (18.4%) exact matches, in which:
159 unique CDR3
6 unique J



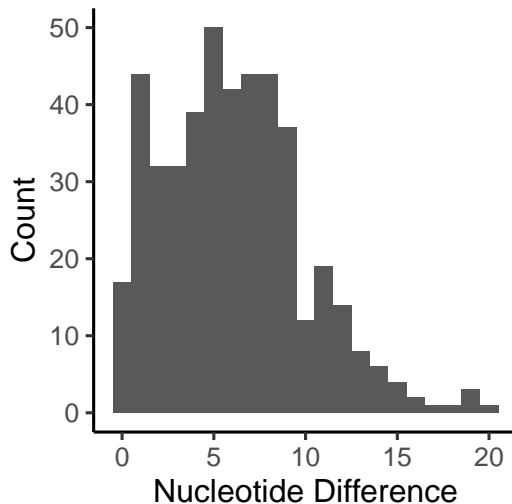
IGHV3-11*01

16930 sequences assigned
4143 (24.5%) exact matches, in which:
3203 unique CDR3
7 unique J



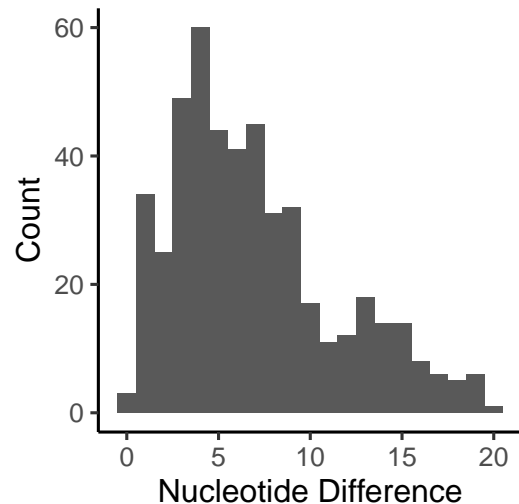
IGHV3-13*01_G290A

454 sequences assigned
17 (3.7%) exact matches, in which:
17 unique CDR3
5 unique J



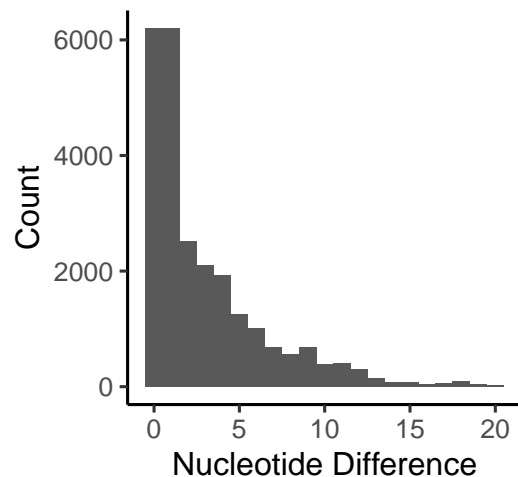
IGHV3-20*04

483 sequences assigned
3 (0.6%) exact matches, in which:
3 unique CDR3
3 unique J



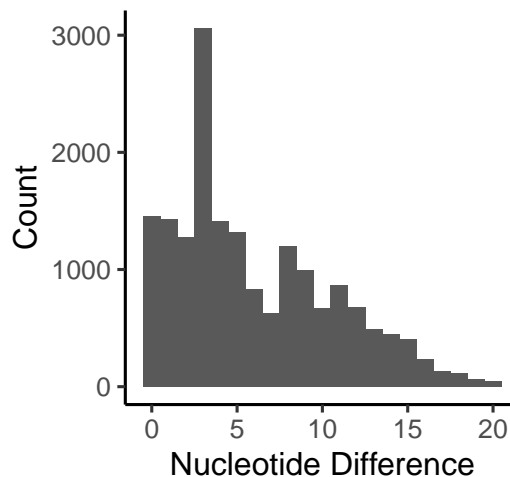
IGHV3-21*01

25034 sequences assigned
6199 (24.8%) exact matches, in which:
5001 unique CDR3
7 unique J



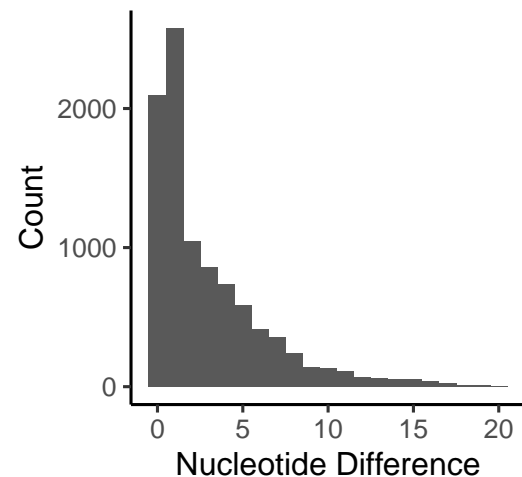
IGHV3-23*04

18097 sequences assigned
1457 (8.1%) exact matches, in which:
1257 unique CDR3
7 unique J



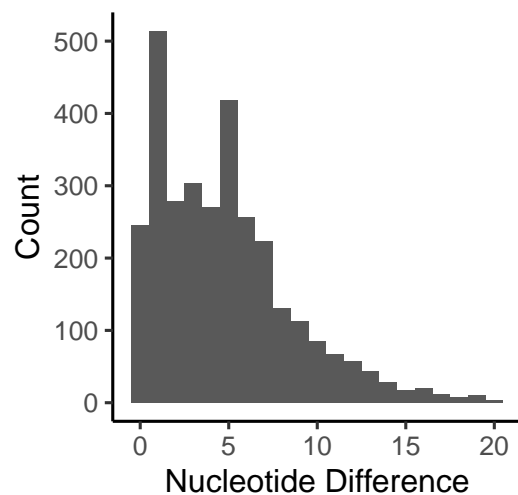
IGHV3-33*01

9691 sequences assigned
2099 (21.7%) exact matches, in which:
1580 unique CDR3
7 unique J



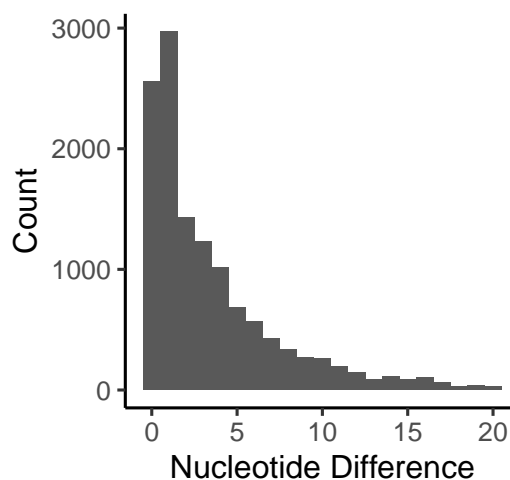
IGHV3-21*04

3120 sequences assigned
246 (7.9%) exact matches, in which:
240 unique CDR3
7 unique J



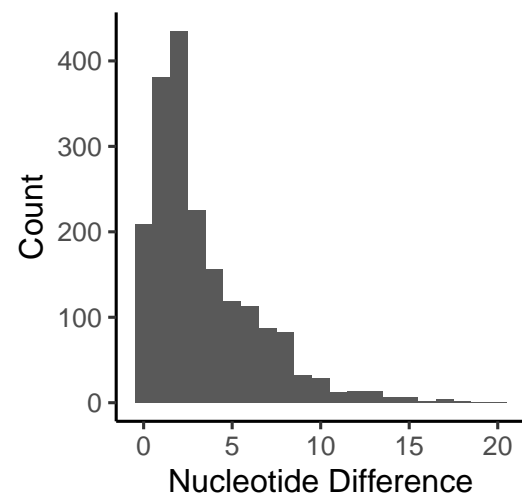
IGHV3-30-3*01

12886 sequences assigned
2558 (19.9%) exact matches, in which:
1893 unique CDR3
7 unique J



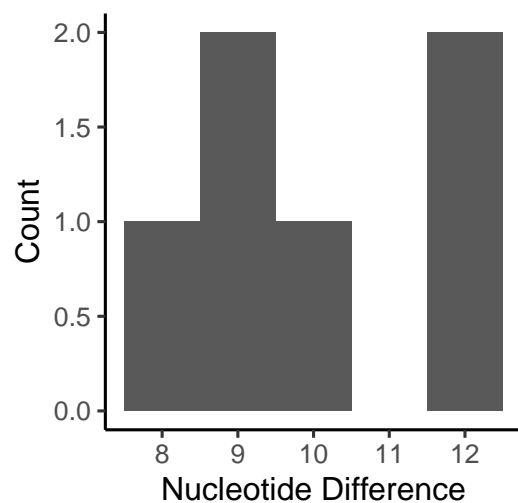
IGHV3-33*06

1933 sequences assigned
209 (10.8%) exact matches, in which:
204 unique CDR3
6 unique J



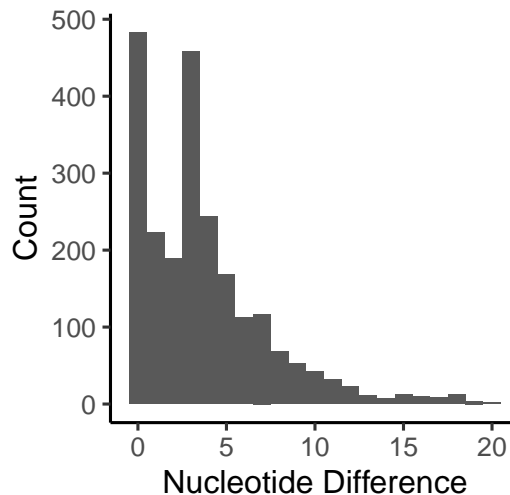
IGHV3-22*02

6 sequences assigned
No exact matches.



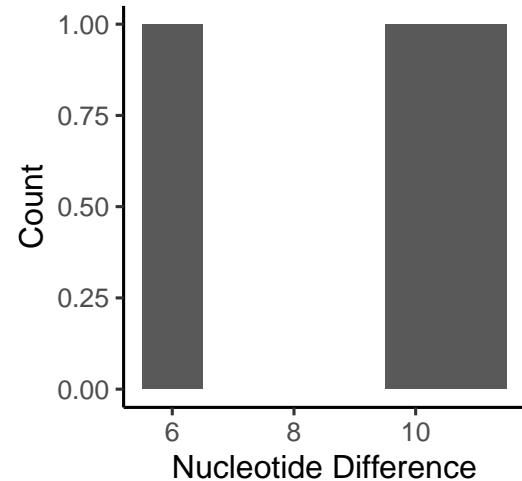
IGHV3-30-3*02_G75C

2316 sequences assigned
483 (20.9%) exact matches, in which:
468 unique CDR3
7 unique J



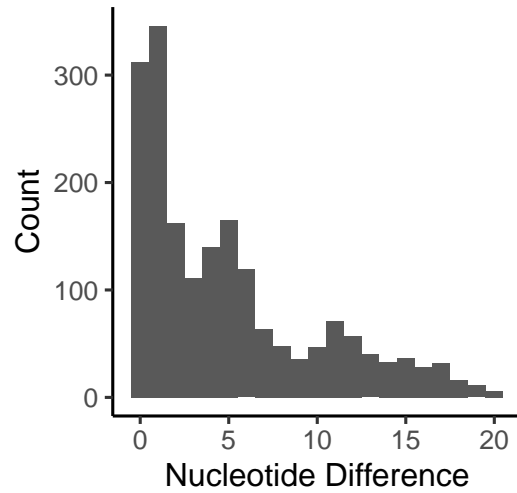
IGHV3-35*02

3 sequences assigned
No exact matches.



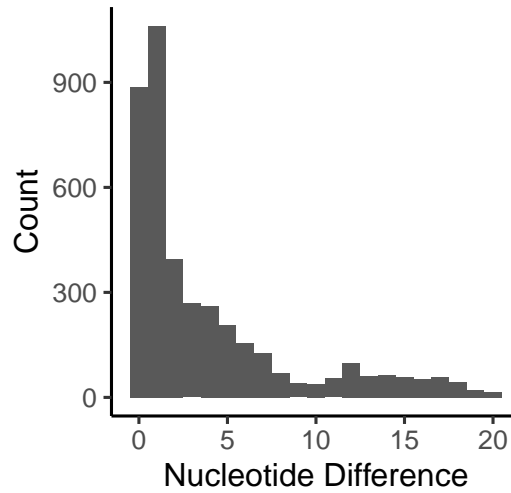
IGHV3-43*01

1906 sequences assigned
312 (16.4%) exact matches, in which:
257 unique CDR3
6 unique J



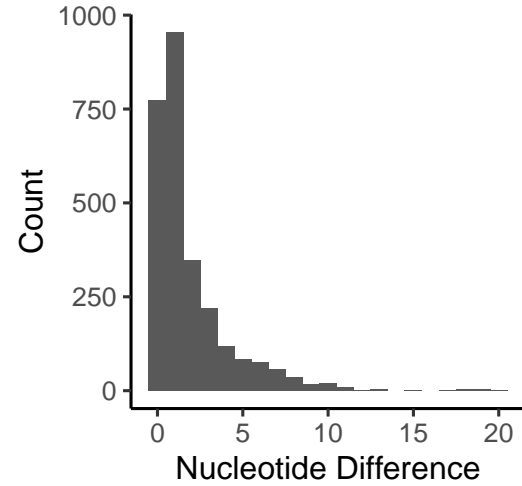
IGHV3-49*03

4109 sequences assigned
886 (21.6%) exact matches, in which:
703 unique CDR3
7 unique J



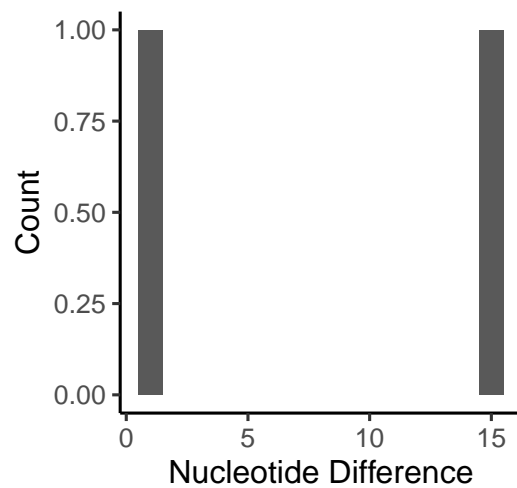
IGHV3-53*02

2748 sequences assigned
773 (28.1%) exact matches, in which:
630 unique CDR3
7 unique J



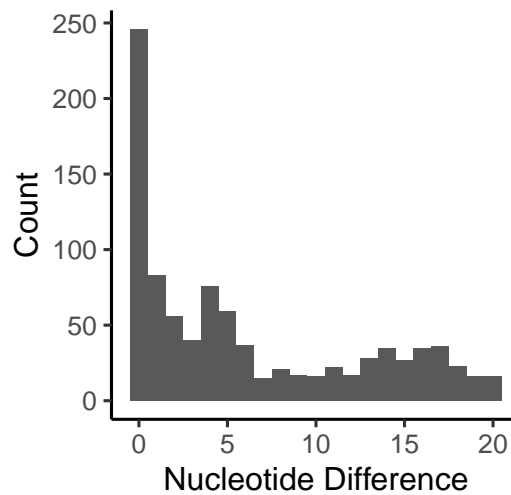
IGHV3-47*02

2 sequences assigned
No exact matches.



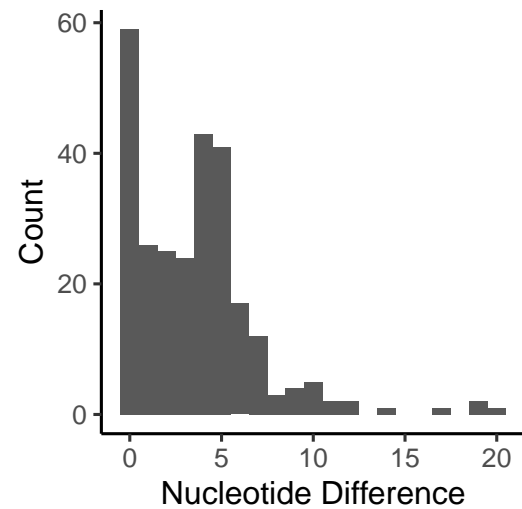
IGHV3-49*03_A313G

949 sequences assigned
246 (25.9%) exact matches, in which:
244 unique CDR3
7 unique J



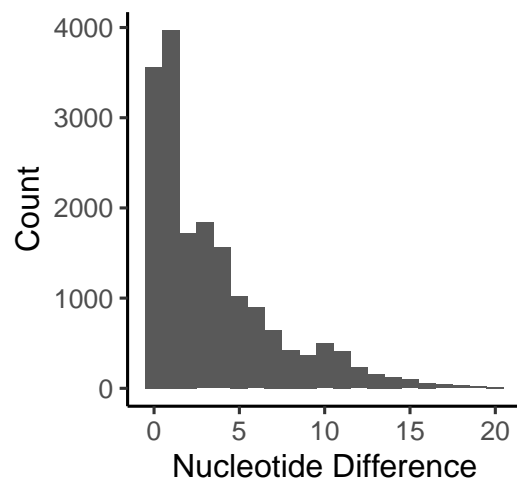
IGHV3-53*02_T267G_C3

272 sequences assigned
59 (21.7%) exact matches, in which:
59 unique CDR3
6 unique J



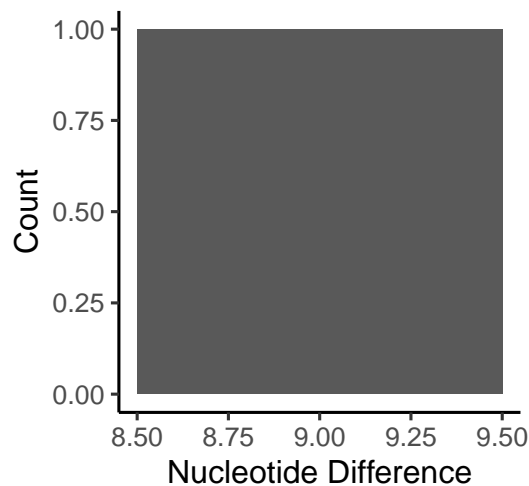
IGHV3-48*01

17813 sequences assigned
3562 (20%) exact matches, in which:
2865 unique CDR3
7 unique J



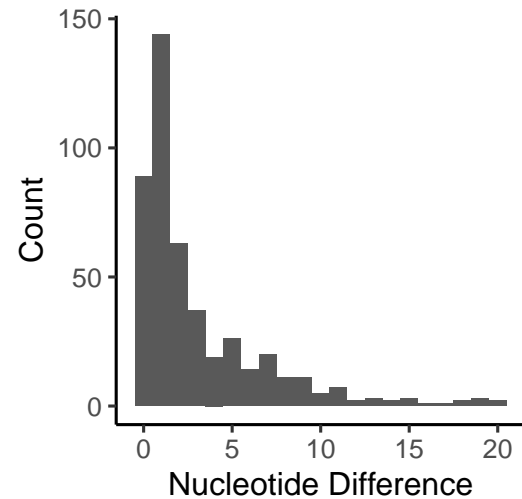
IGHV3-52*02

1 sequences assigned
No exact matches.



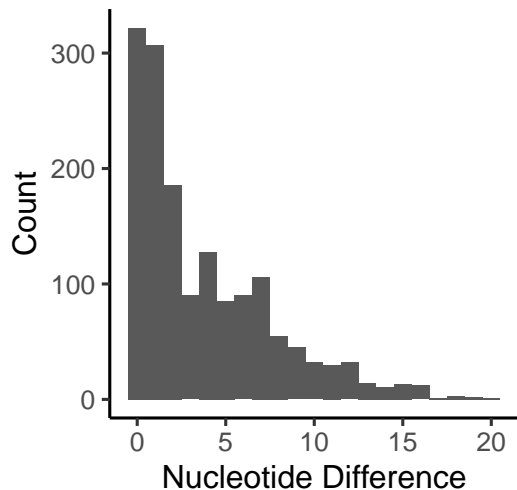
IGHV3-53*05_T267G_C3

467 sequences assigned
89 (19.1%) exact matches, in which:
88 unique CDR3
7 unique J



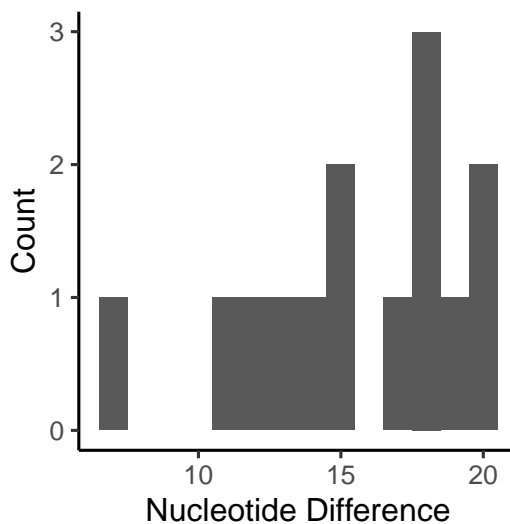
IGHV3-64*01

1591 sequences assigned
322 (20.2%) exact matches, in which:
272 unique CDR3
7 unique J



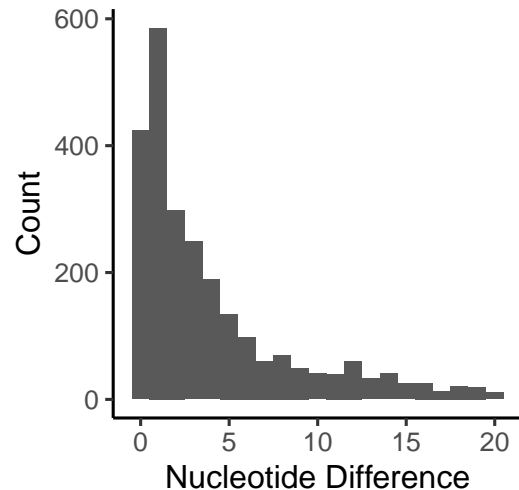
IGHV3-69-1*01

17 sequences assigned
No exact matches.



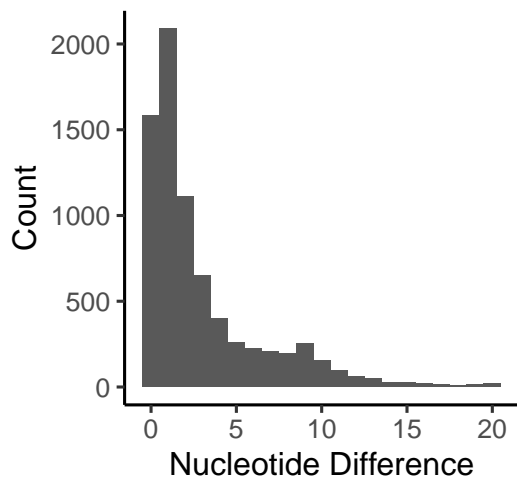
IGHV3-73*01

2529 sequences assigned
424 (16.8%) exact matches, in which:
340 unique CDR3
6 unique J



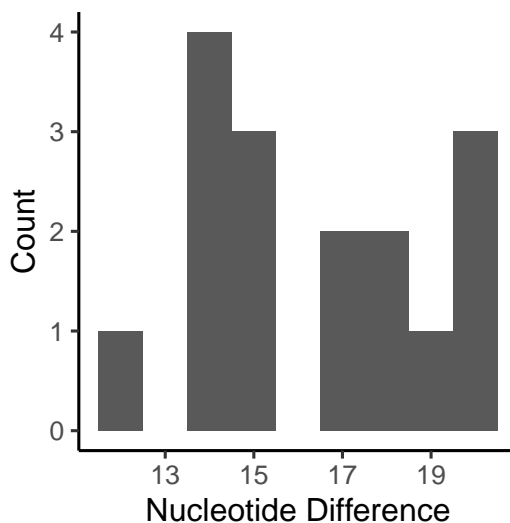
IGHV3-66*02

7548 sequences assigned
1585 (21%) exact matches, in which:
1236 unique CDR3
7 unique J



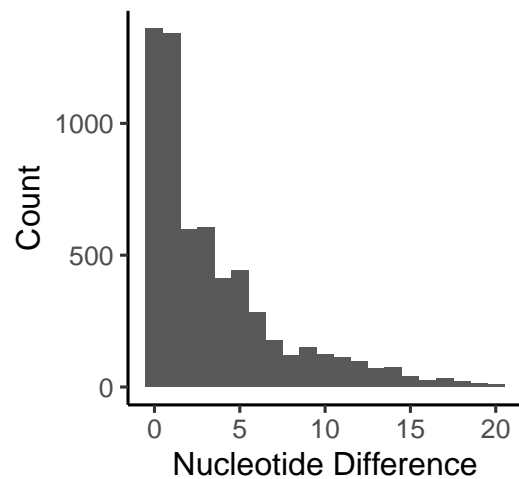
IGHV3-71*04

19 sequences assigned
No exact matches.



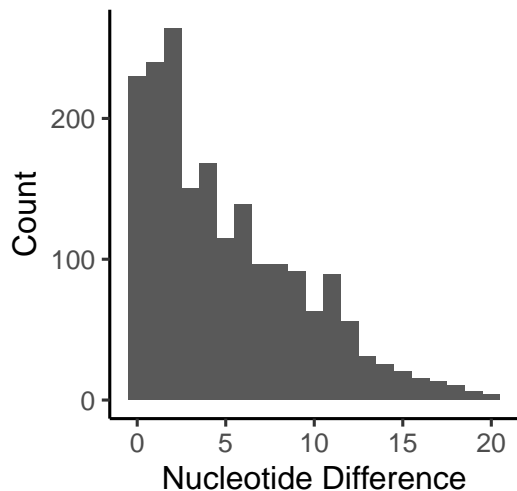
IGHV3-74*01

6139 sequences assigned
1359 (22.1%) exact matches, in which:
1120 unique CDR3
7 unique J



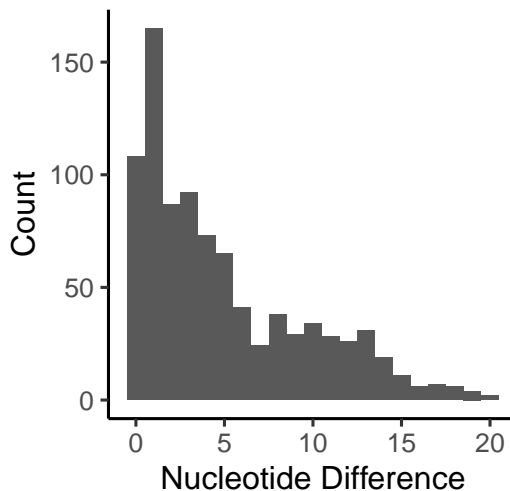
IGHV3-66*01_A223C_T2

1965 sequences assigned
230 (11.7%) exact matches, in which:
229 unique CDR3
7 unique J



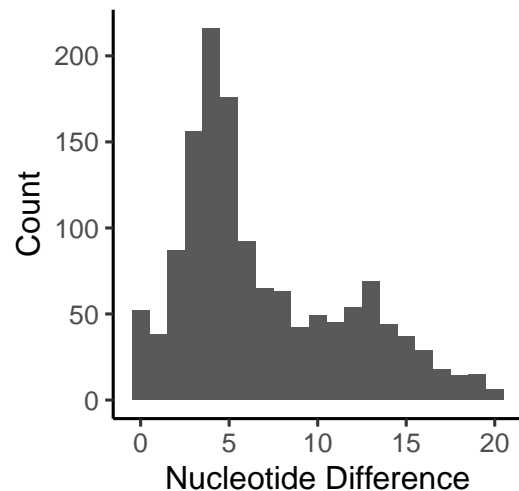
IGHV3-72*01

929 sequences assigned
108 (11.6%) exact matches, in which:
87 unique CDR3
6 unique J



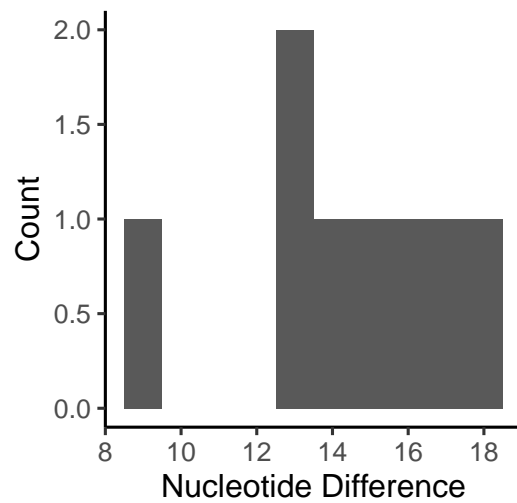
IGHV3-74*02

1396 sequences assigned
52 (3.7%) exact matches, in which:
48 unique CDR3
6 unique J



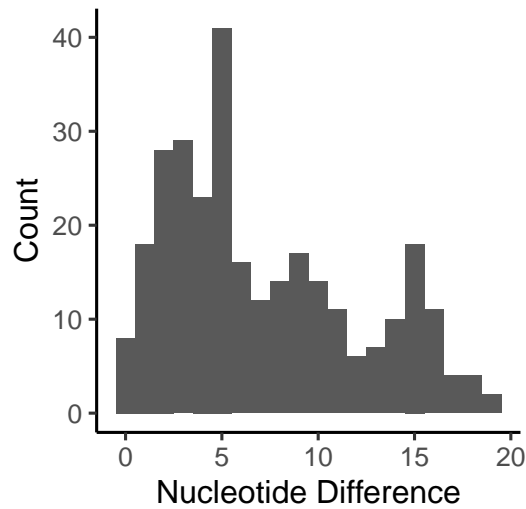
IGHV3-43D*04

9 sequences assigned
No exact matches.



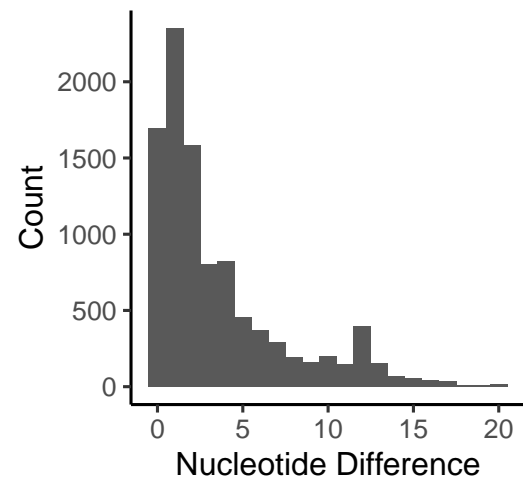
IGHV3-NL1*01_G49A_T2

295 sequences assigned
8 (2.7%) exact matches, in which:
8 unique CDR3
3 unique J



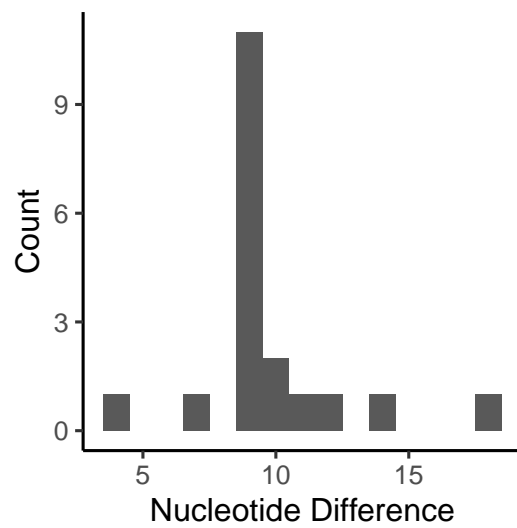
IGHV4-4*07

9968 sequences assigned
1696 (17%) exact matches, in which:
1469 unique CDR3
7 unique J



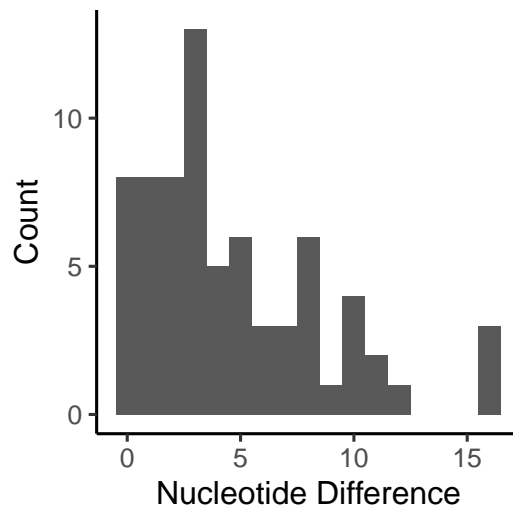
IGHV3-64D*06

20 sequences assigned
No exact matches.



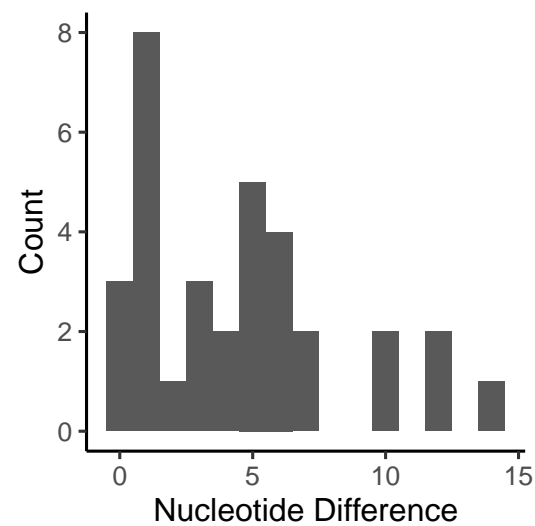
IGHV3-NL1*01_T201C_G

73 sequences assigned
8 (11%) exact matches, in which:
8 unique CDR3
5 unique J



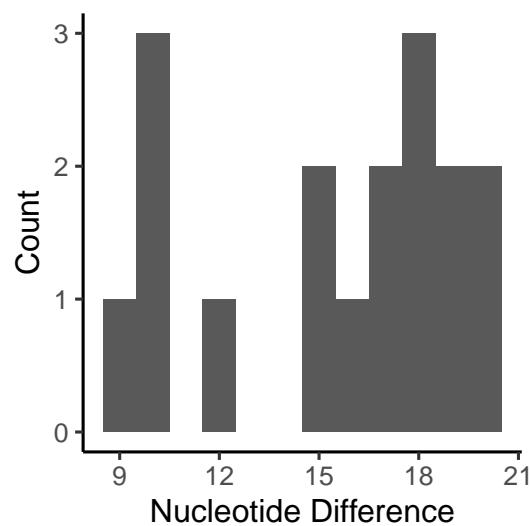
IGHV4-28*03

34 sequences assigned
3 (8.8%) exact matches, in which:
3 unique CDR3
3 unique J



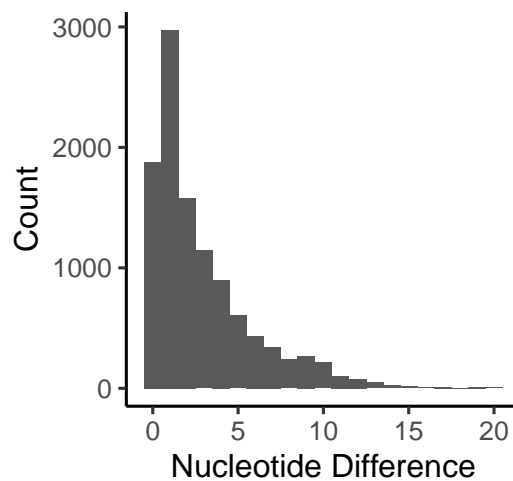
IGHV3-NL1*01

20 sequences assigned
No exact matches.



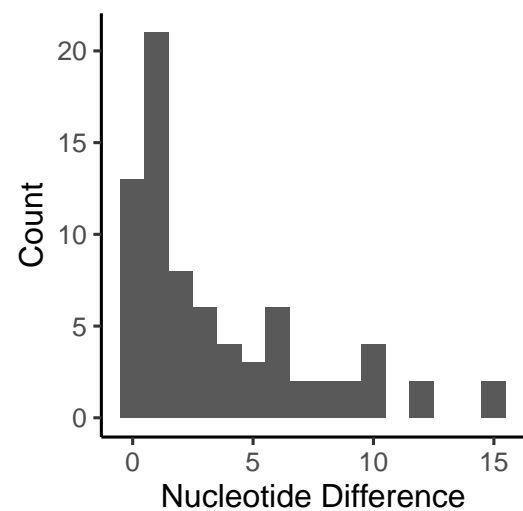
IGHV4-4*02

11075 sequences assigned
1880 (17%) exact matches, in which:
1587 unique CDR3
7 unique J



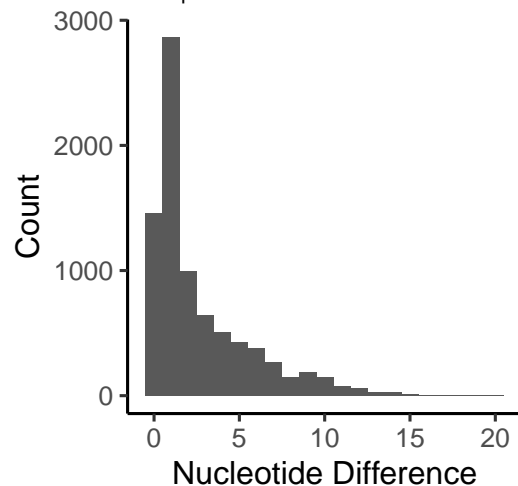
IGHV4-28*07

75 sequences assigned
13 (17.3%) exact matches, in which:
9 unique CDR3
5 unique J



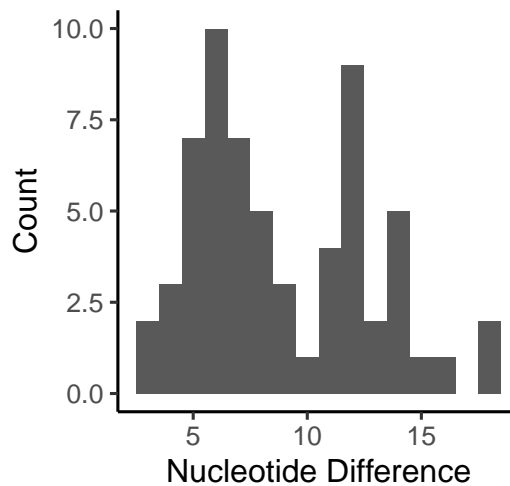
IGHV4-30-2*01

8278 sequences assigned
1459 (17.6%) exact matches, in which:
1041 unique CDR3
7 unique J



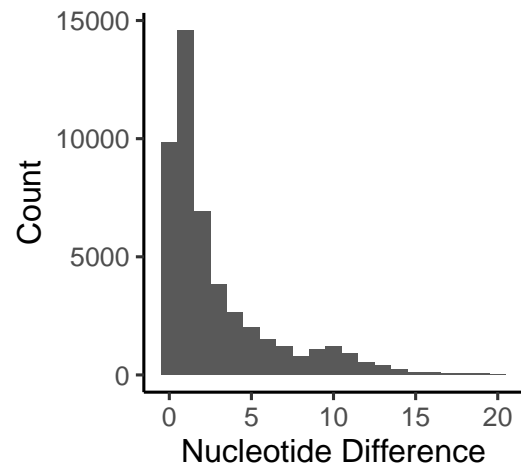
IGHV4-30-4*08

64 sequences assigned
No exact matches.



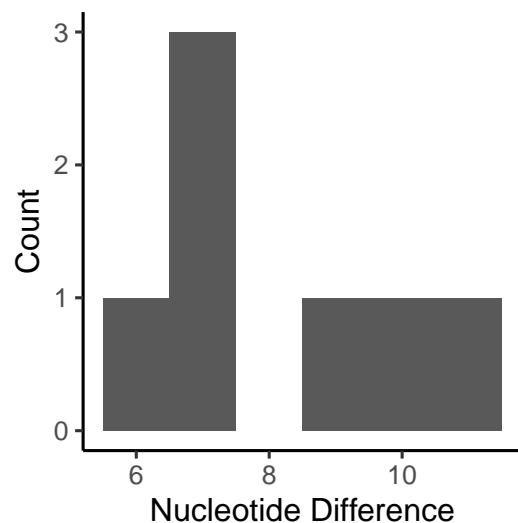
IGHV4-34*01

48591 sequences assigned
9824 (20.2%) exact matches, in which:
7919 unique CDR3
7 unique J



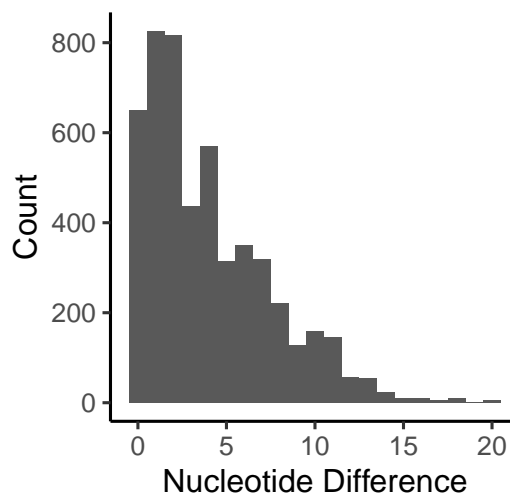
IGHV4-30-4*01

8 sequences assigned
No exact matches.



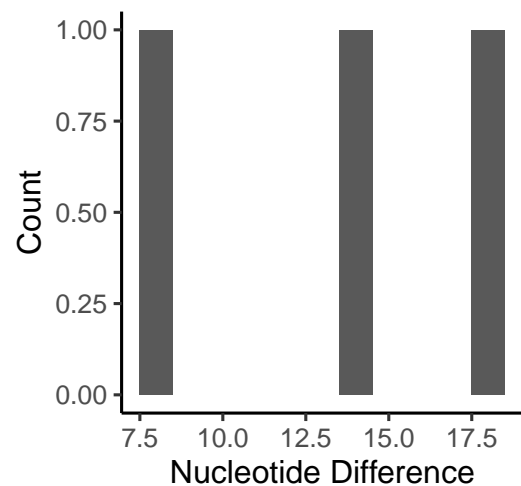
IGHV4-30-2*01_C315G

5157 sequences assigned
651 (12.6%) exact matches, in which:
637 unique CDR3
7 unique J



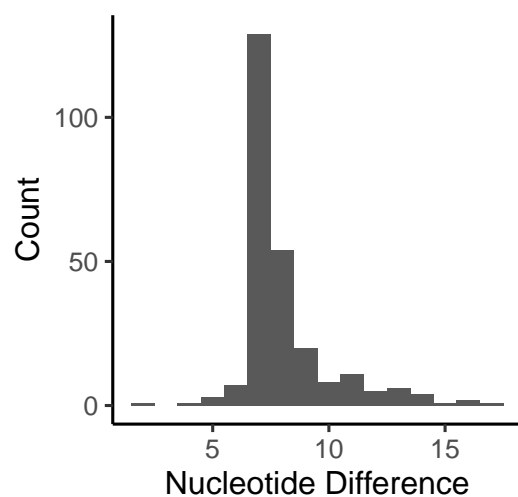
IGHV4-38-2*01

61 sequences assigned
No exact matches.



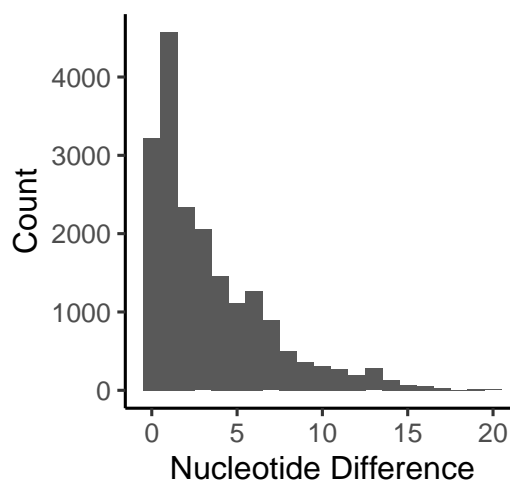
IGHV4-30-4*07

253 sequences assigned
No exact matches.



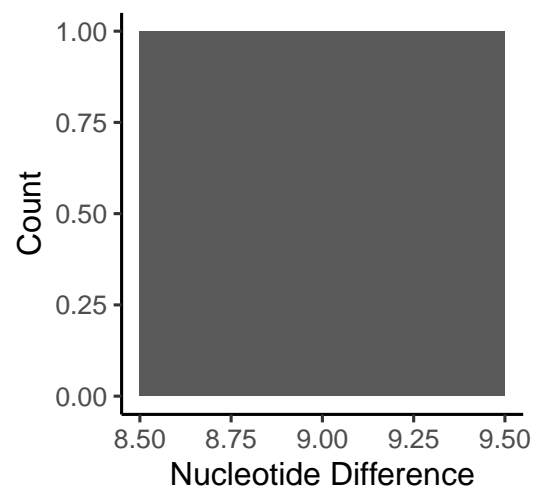
IGHV4-31*03

19386 sequences assigned
3222 (16.6%) exact matches, in which:
2629 unique CDR3
7 unique J



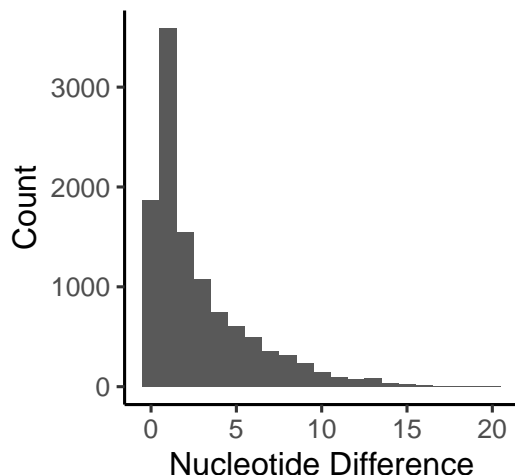
IGHV4-38-2*02

8 sequences assigned
No exact matches.



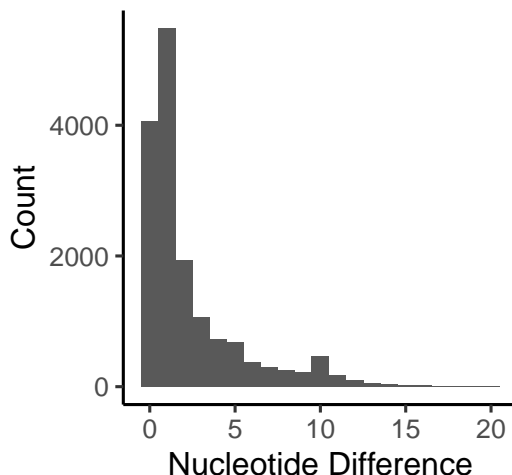
IGHV4-39*01

11497 sequences assigned
1869 (16.3%) exact matches, in which:
1440 unique CDR3
7 unique J



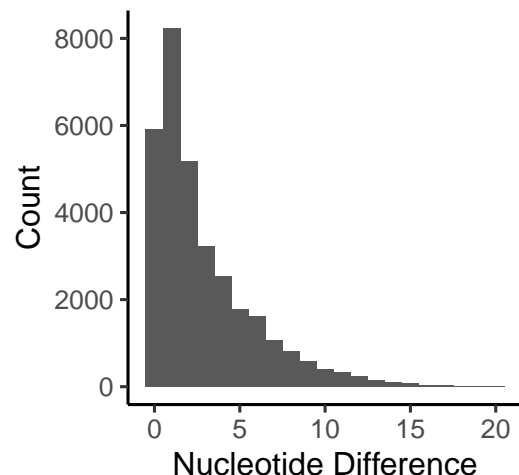
IGHV4-59*01

16078 sequences assigned
4059 (25.2%) exact matches, in which:
3308 unique CDR3
7 unique J



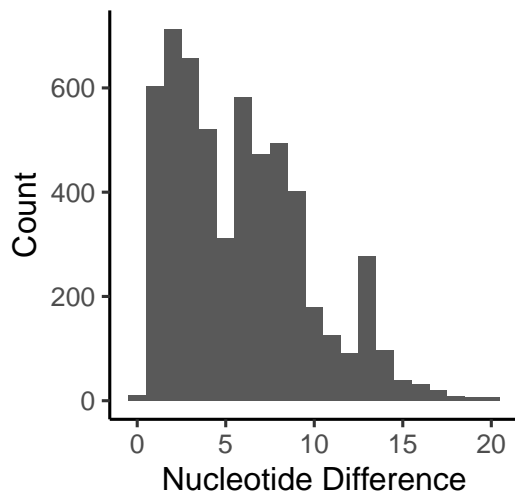
IGHV4-61*02

32417 sequences assigned
5913 (18.2%) exact matches, in which:
4921 unique CDR3
7 unique J



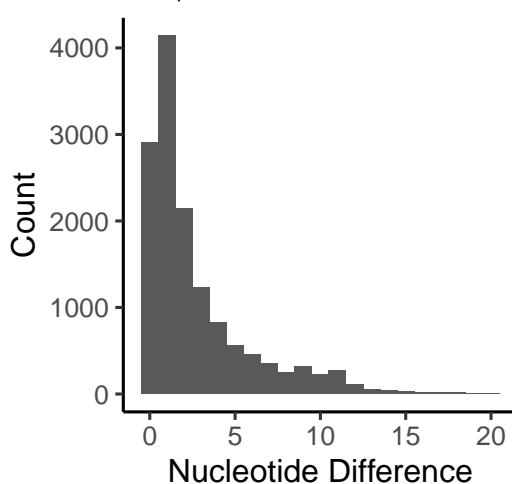
IGHV4-39*07

5684 sequences assigned
11 (0.2%) exact matches, in which:
11 unique CDR3
6 unique J



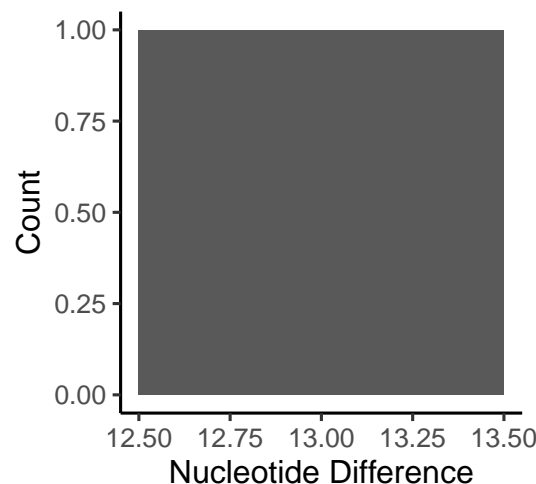
IGHV4-59*01_G48A_G4

13976 sequences assigned
2906 (20.8%) exact matches, in which:
2438 unique CDR3
7 unique J



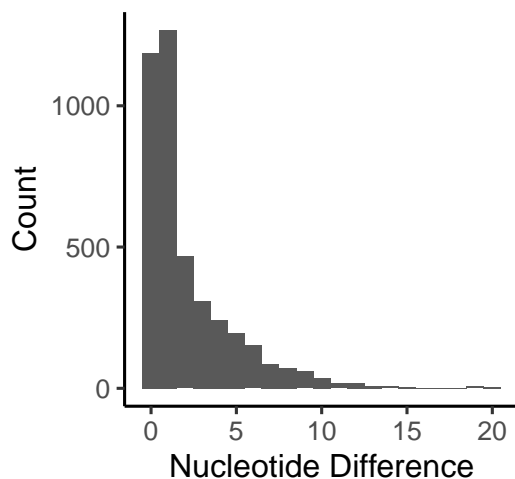
IGHV1/OR15-2*02

1 sequences assigned
No exact matches.



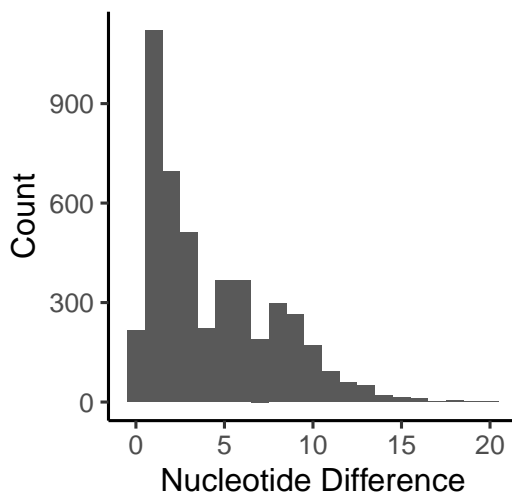
IGHV4-39*02_C258G

4180 sequences assigned
1186 (28.4%) exact matches, in which:
1120 unique CDR3
7 unique J



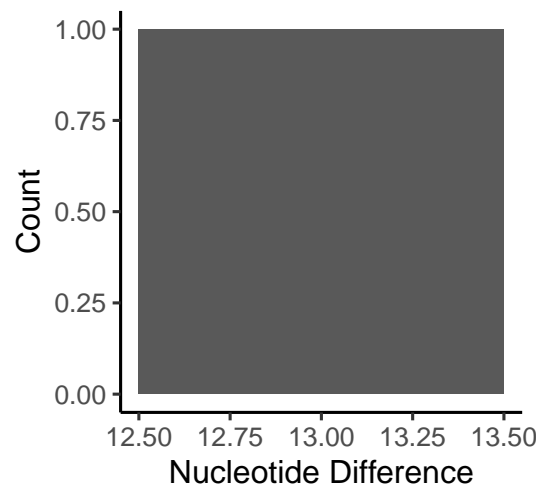
IGHV4-59*12

4733 sequences assigned
217 (4.6%) exact matches, in which:
211 unique CDR3
7 unique J



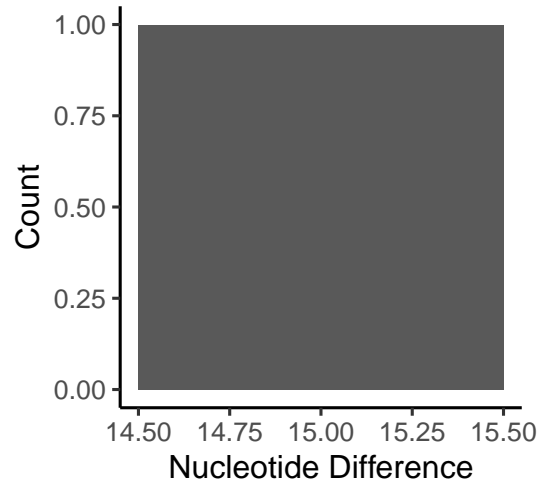
IGHV1/OR15-3*02

1 sequences assigned
No exact matches.



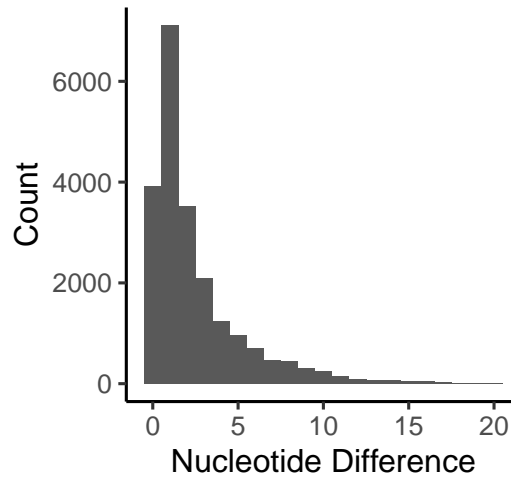
IGHV4/OR15-8*01

1 sequences assigned
No exact matches.



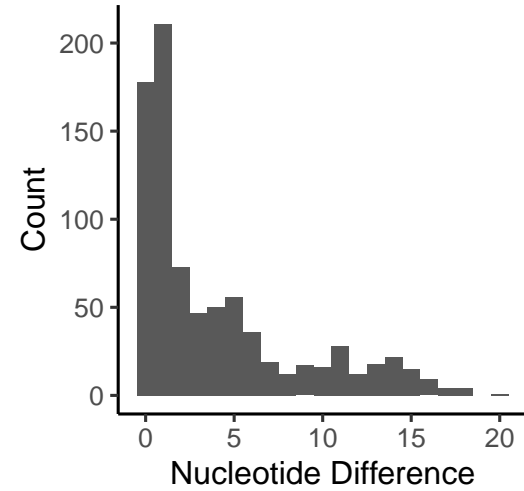
IGHV5-51*03

21647 sequences assigned
3917 (18.1%) exact matches, in which:
2935 unique CDR3
7 unique J



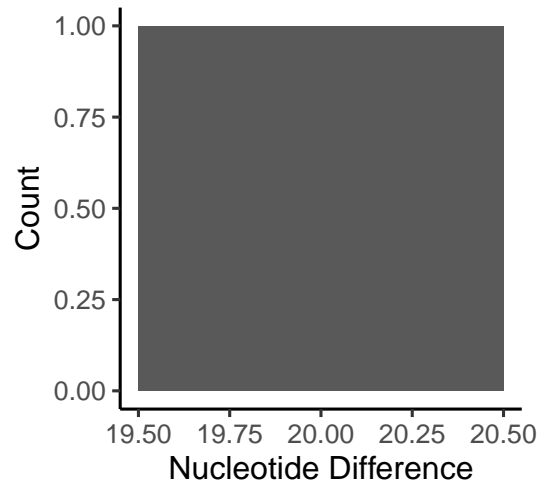
IGHV7-4-1*01

844 sequences assigned
178 (21.1%) exact matches, in which:
156 unique CDR3
6 unique J



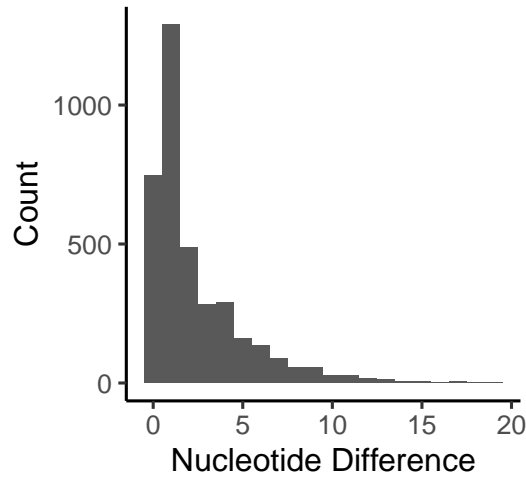
IGHV5-10-1*01

1 sequences assigned
No exact matches.



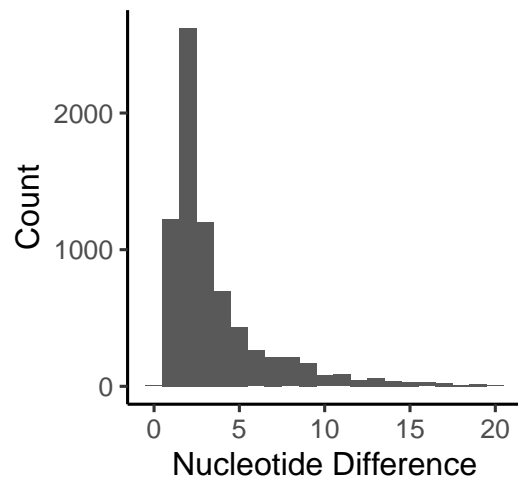
IGHV6-1*01

3702 sequences assigned
745 (20.1%) exact matches, in which:
545 unique CDR3
6 unique J



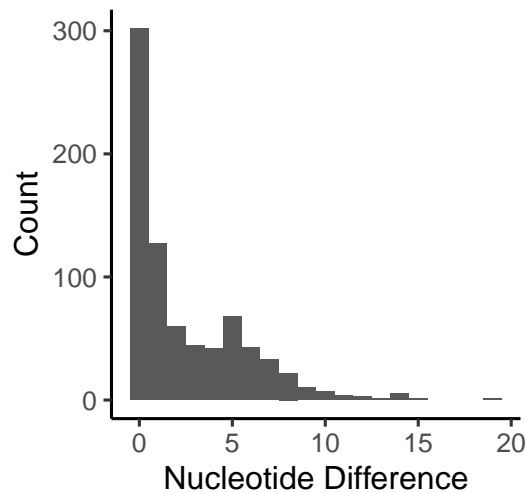
IGHV5-51*01

7614 sequences assigned
7 (0.1%) exact matches, in which:
5 unique CDR3
3 unique J

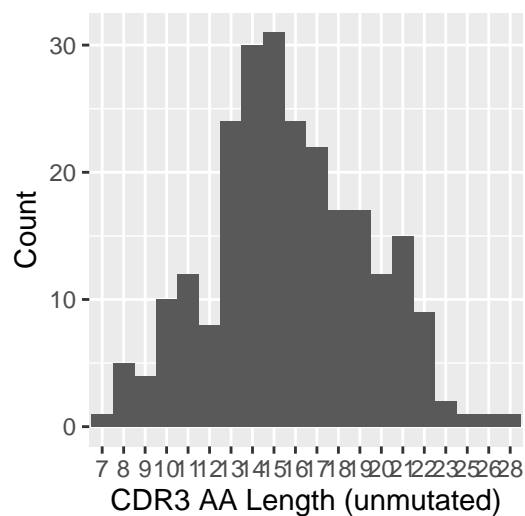


IGHV6-1*01_A315G

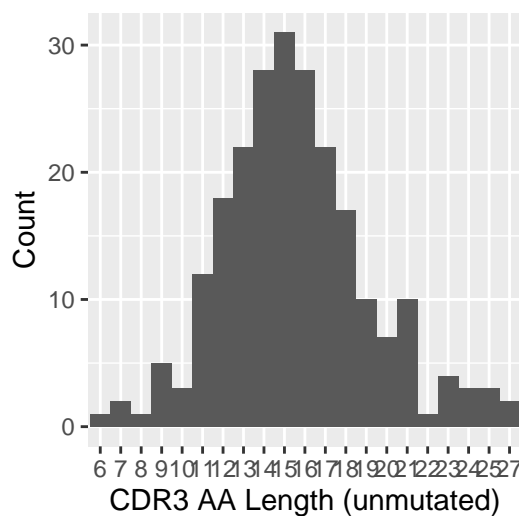
775 sequences assigned
302 (39%) exact matches, in which:
301 unique CDR3
7 unique J



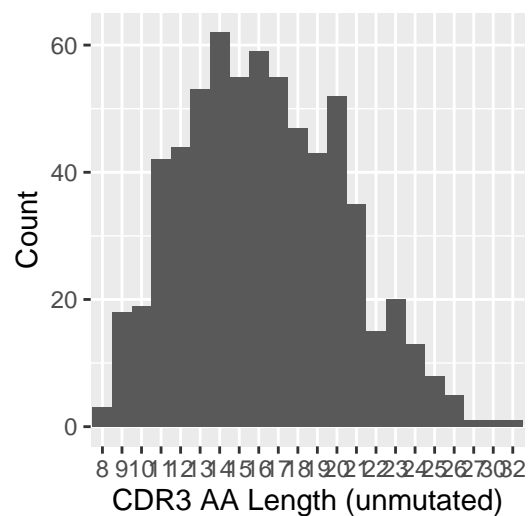
IGHV3-49*03_A313G



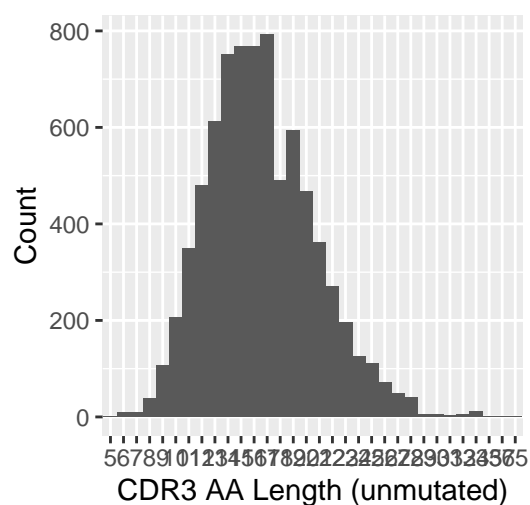
IGHV3-66*01_A223C_T267C



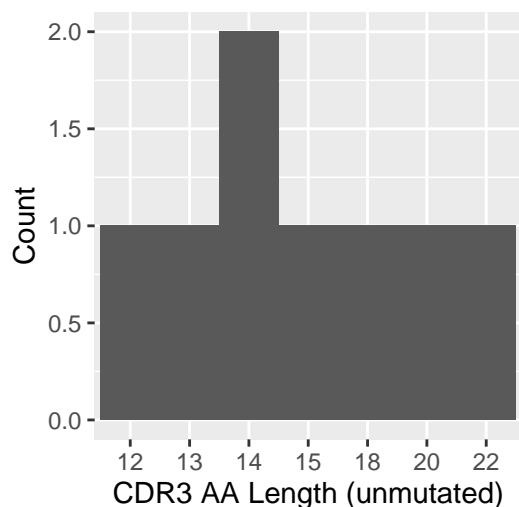
IGHV4-30-2*01_C315G



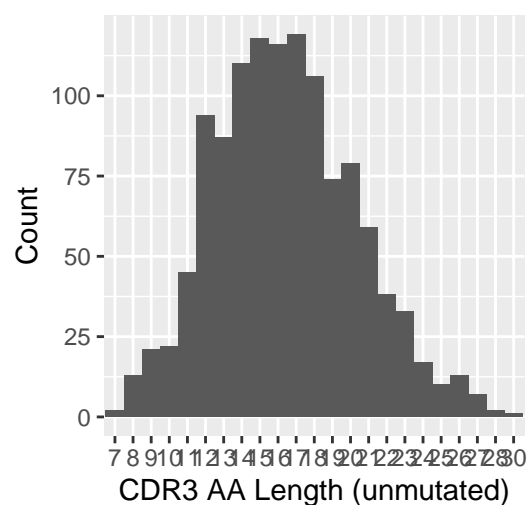
IGHV1-69*08_C191T



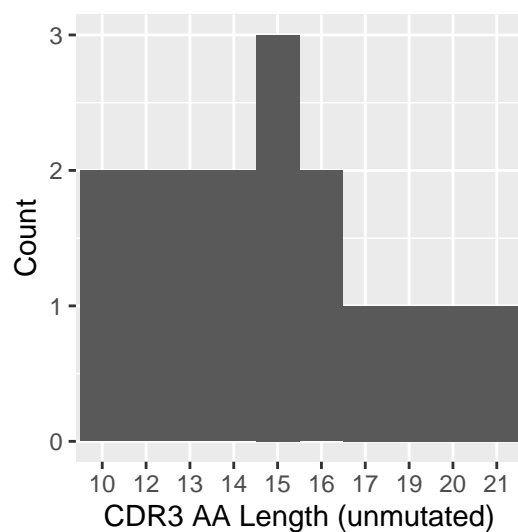
IGHV3-NL1*01_T201C_G26C



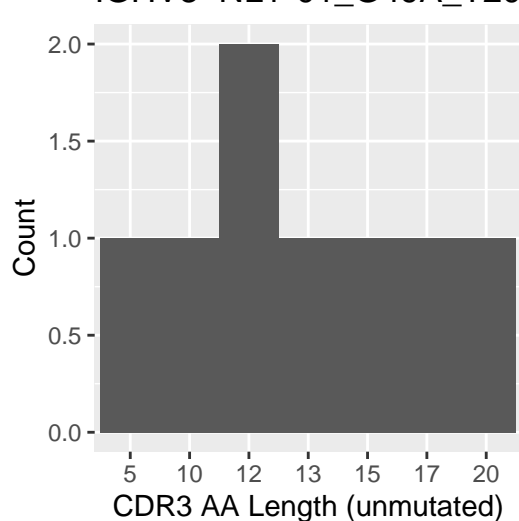
IGHV4-39*02_C258G



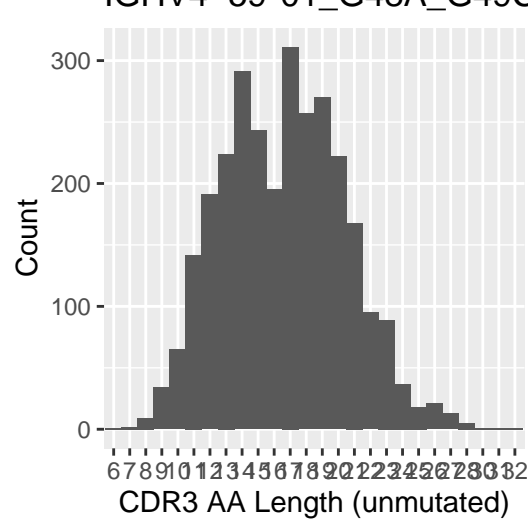
IGHV3-13*01_G290A



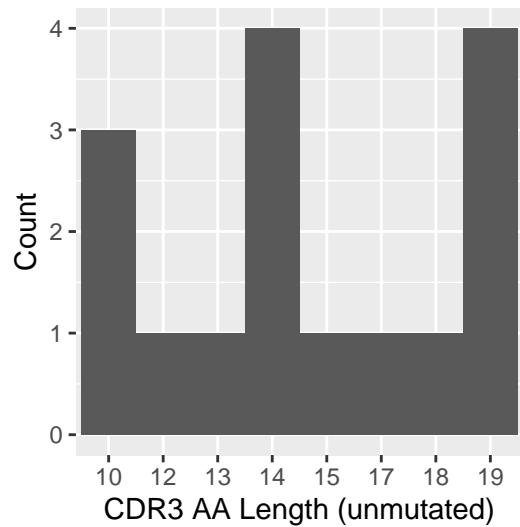
IGHV3-NL1*01_G49A_T201



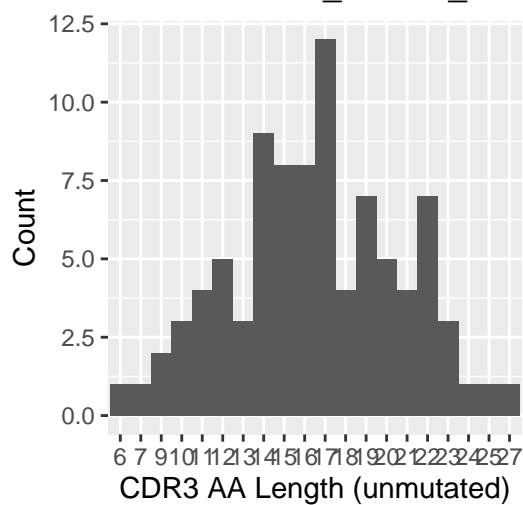
IGHV4-59*01_G48A_G49C



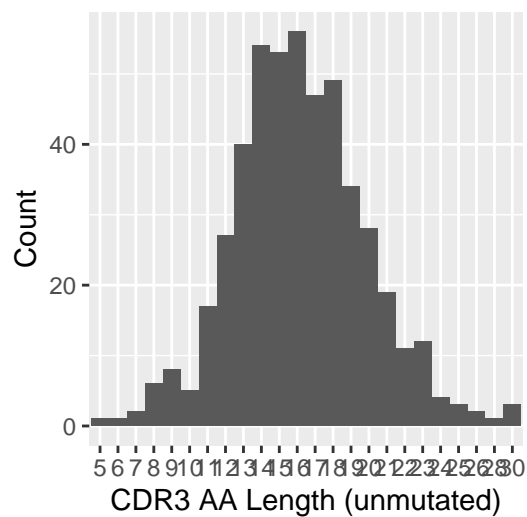
IGHV2-70*04_T116C



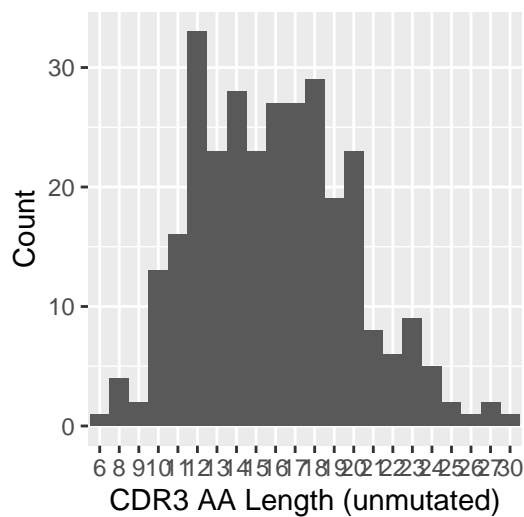
IGHV3-53*05_T267G_C300T



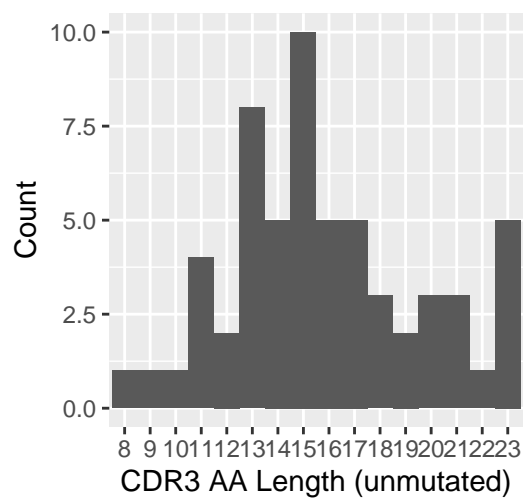
IGHV3-30-3*02_G75C

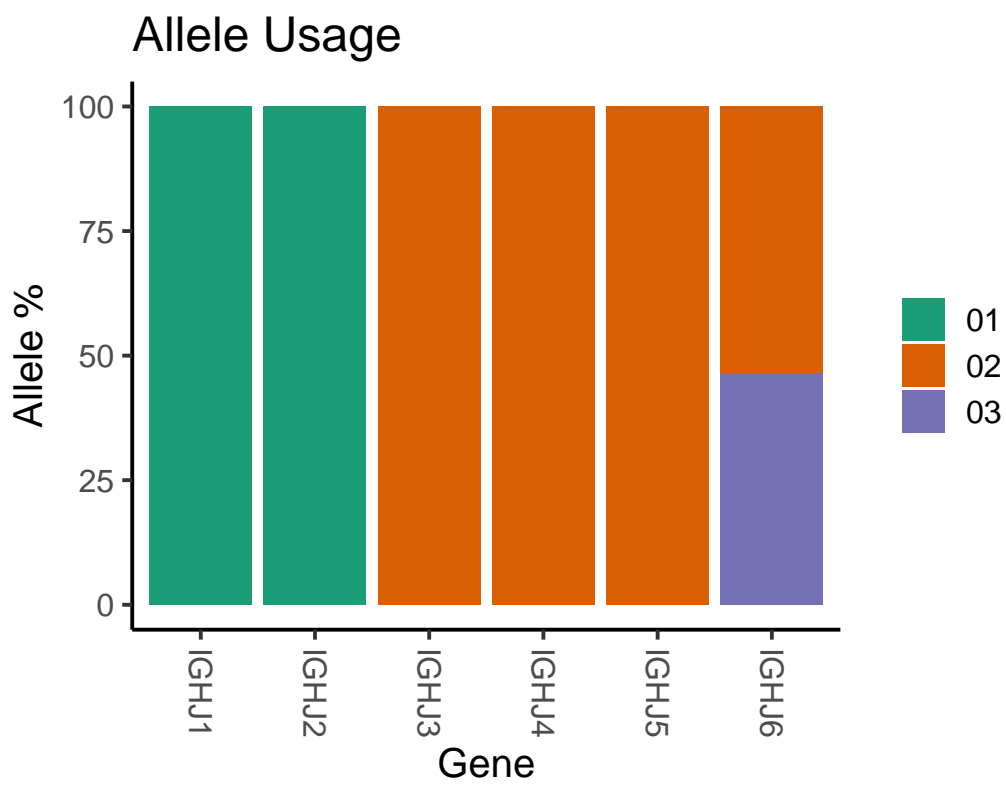


IGHV6-1*01_A315G



IGHV3-53*02_T267G_C300T





Sequence Count by IGHJ6 allele usage

