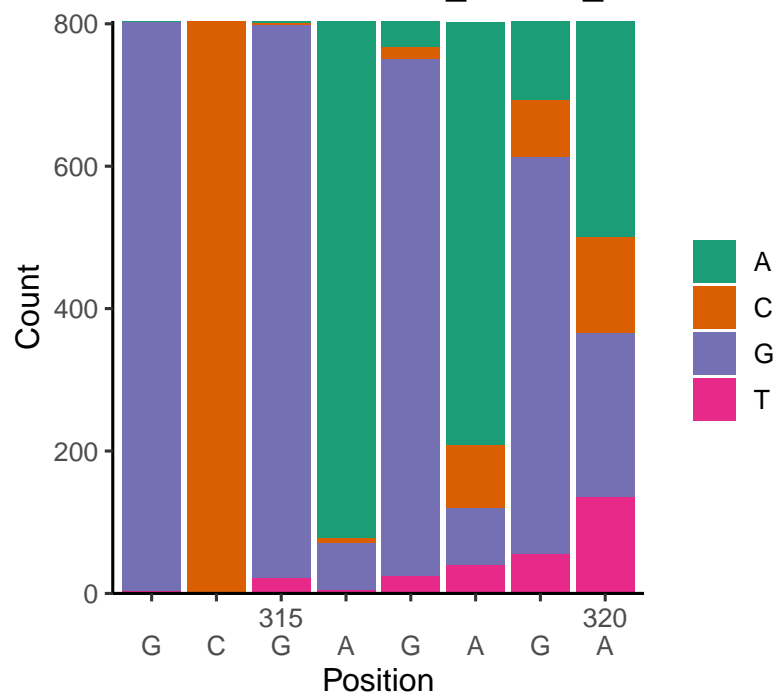
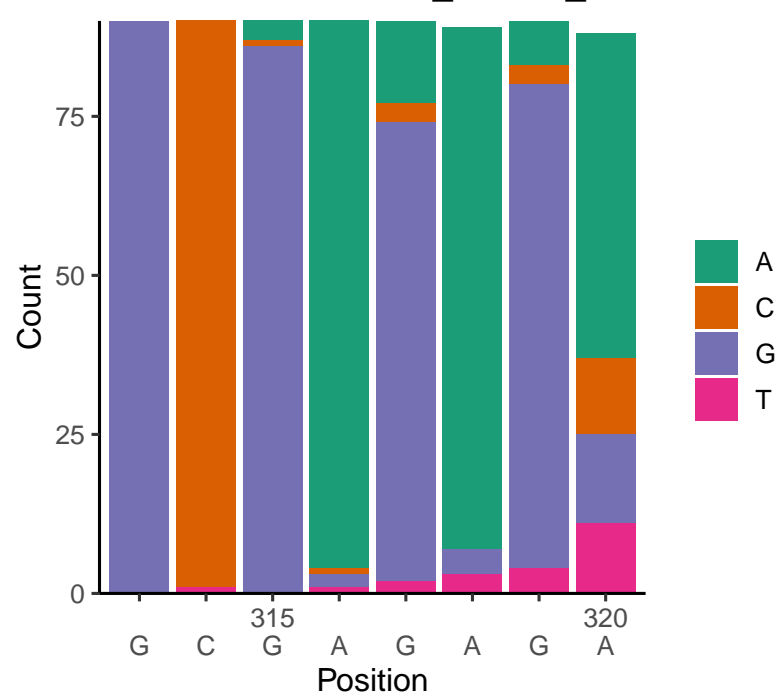


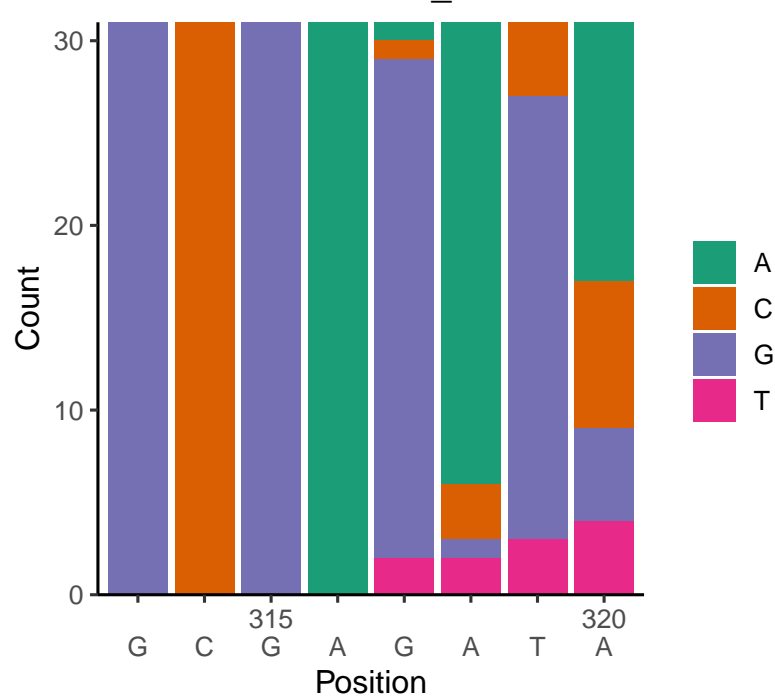
Gene IGHV1-24*01_A315G_C317G



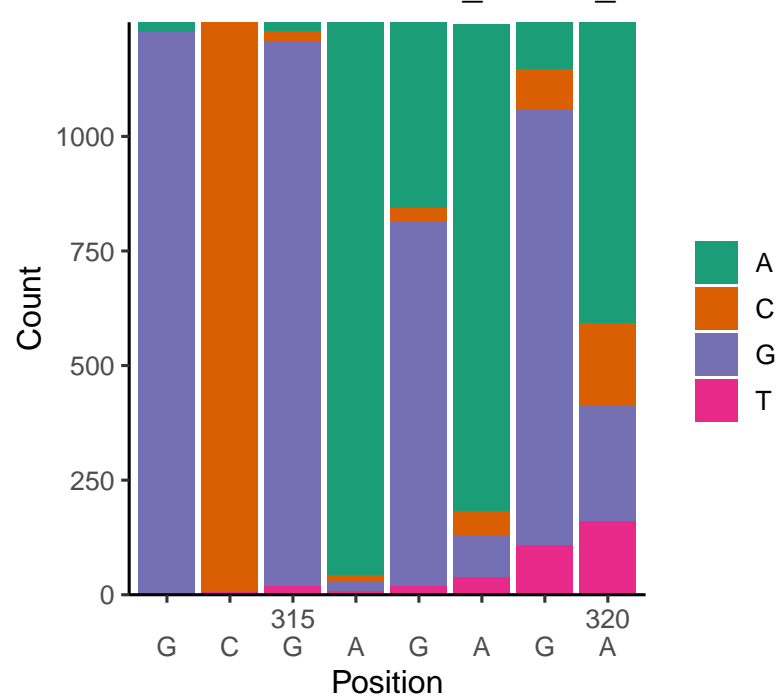
Gene IGHV3-20*04_C300T_T301G



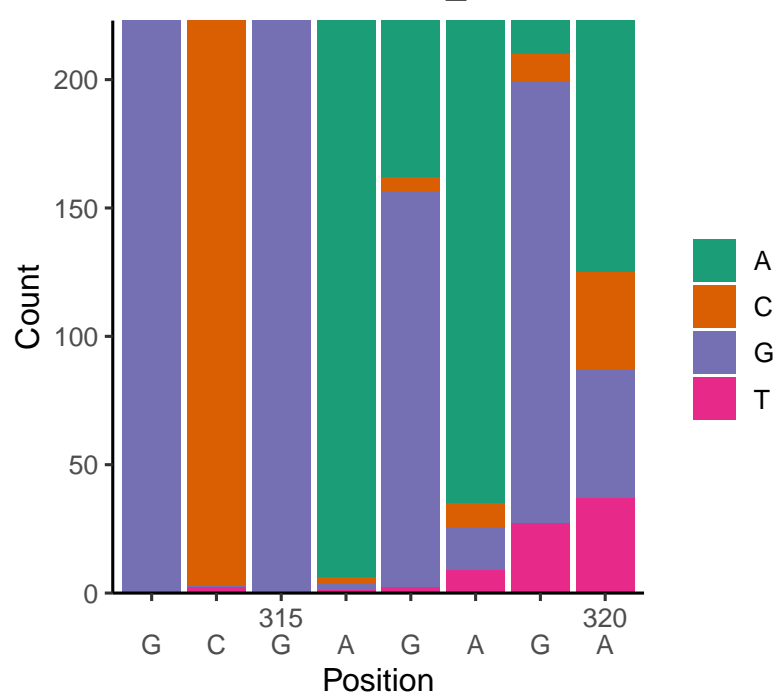
Gene IGHV1-45*02_A315G



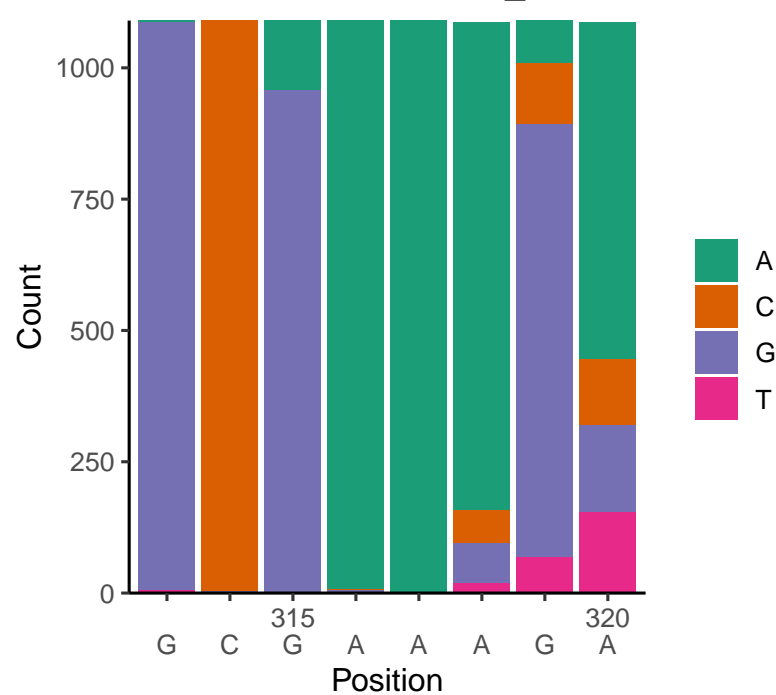
Gene IGHV3-30*03_T288C_T300C



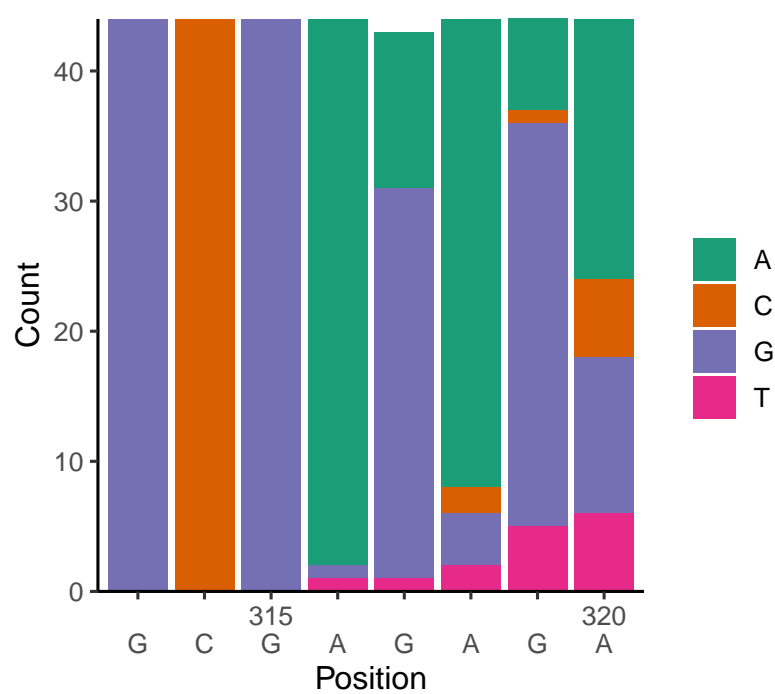
Gene IGHV3-13*01_A315G



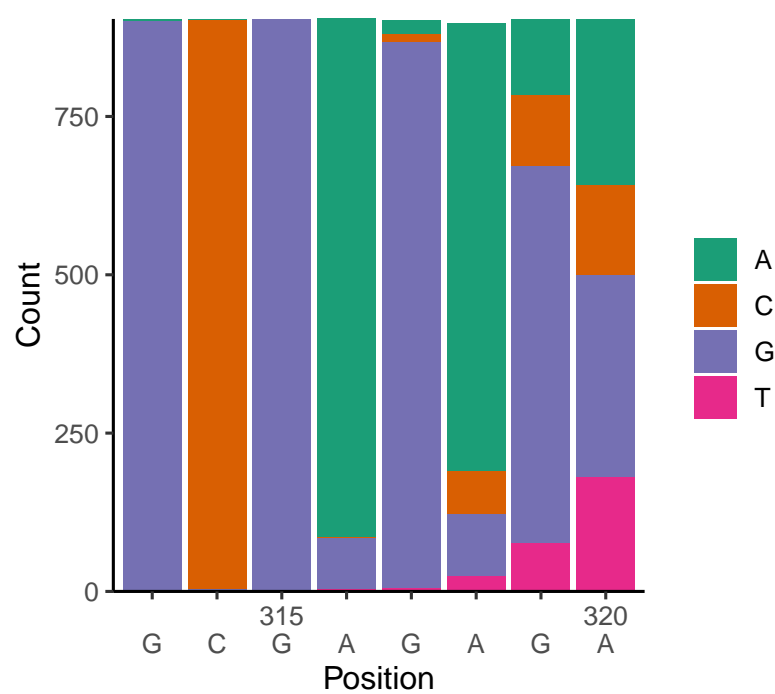
Gene IGHV3-30-3*02_G75C



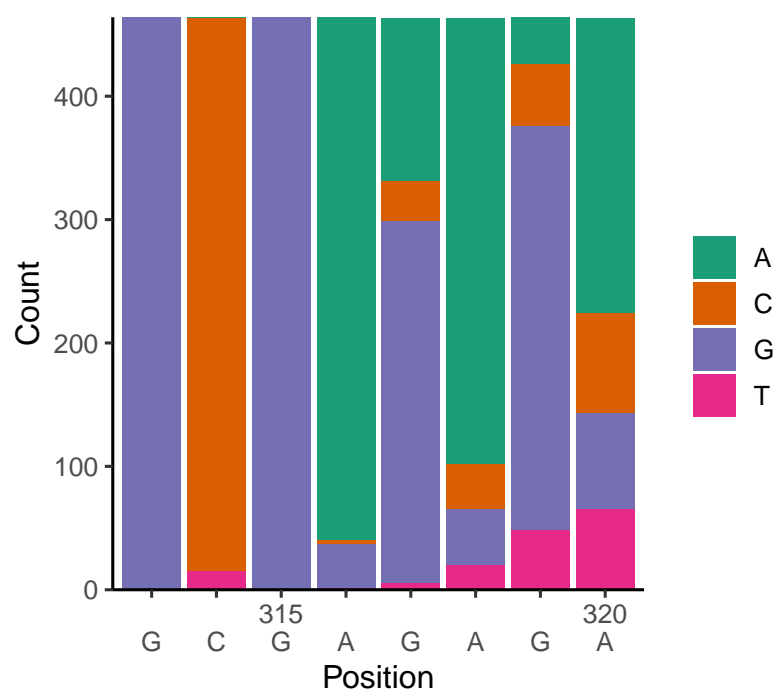
Gene IGHV3-72*01_T315G



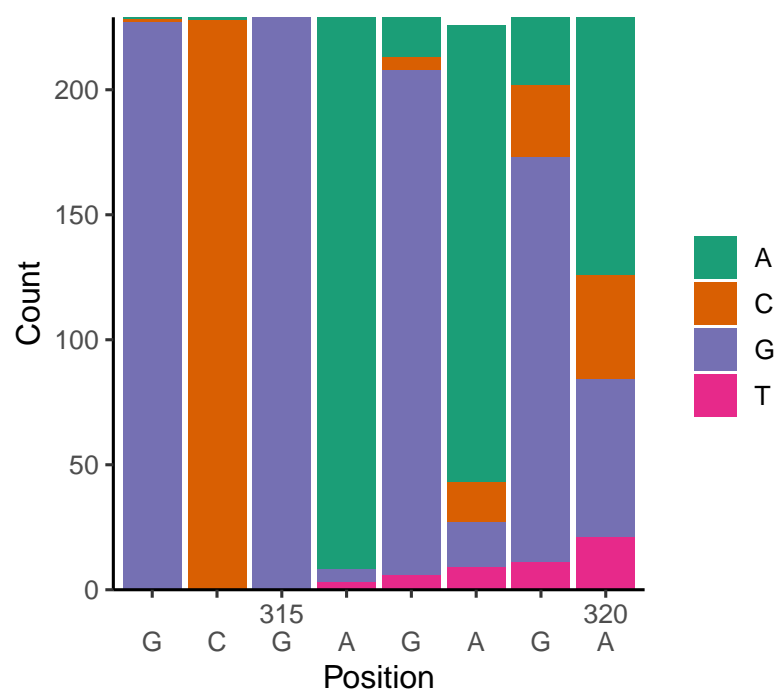
Gene IGHV4-30-4*01_C315G



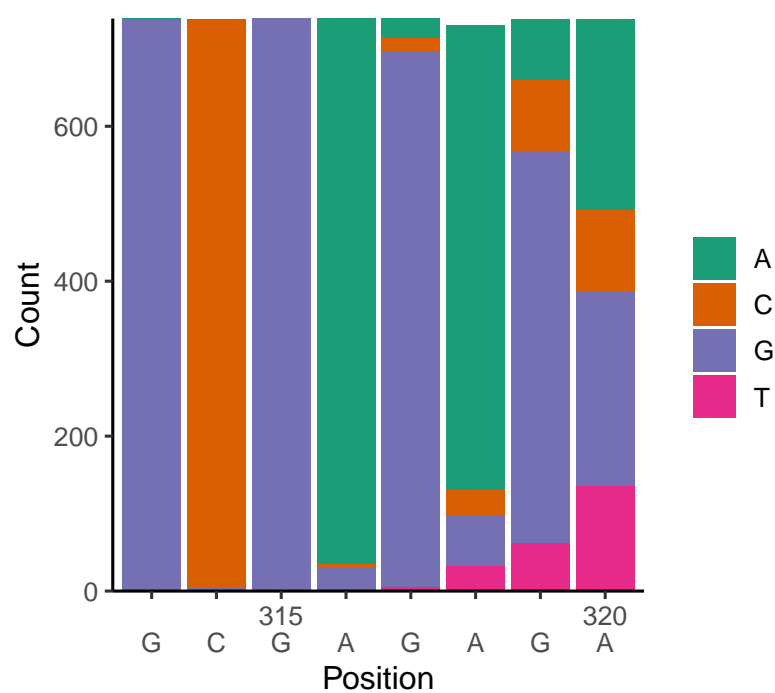
Gene IGHV3-74*01_A315G



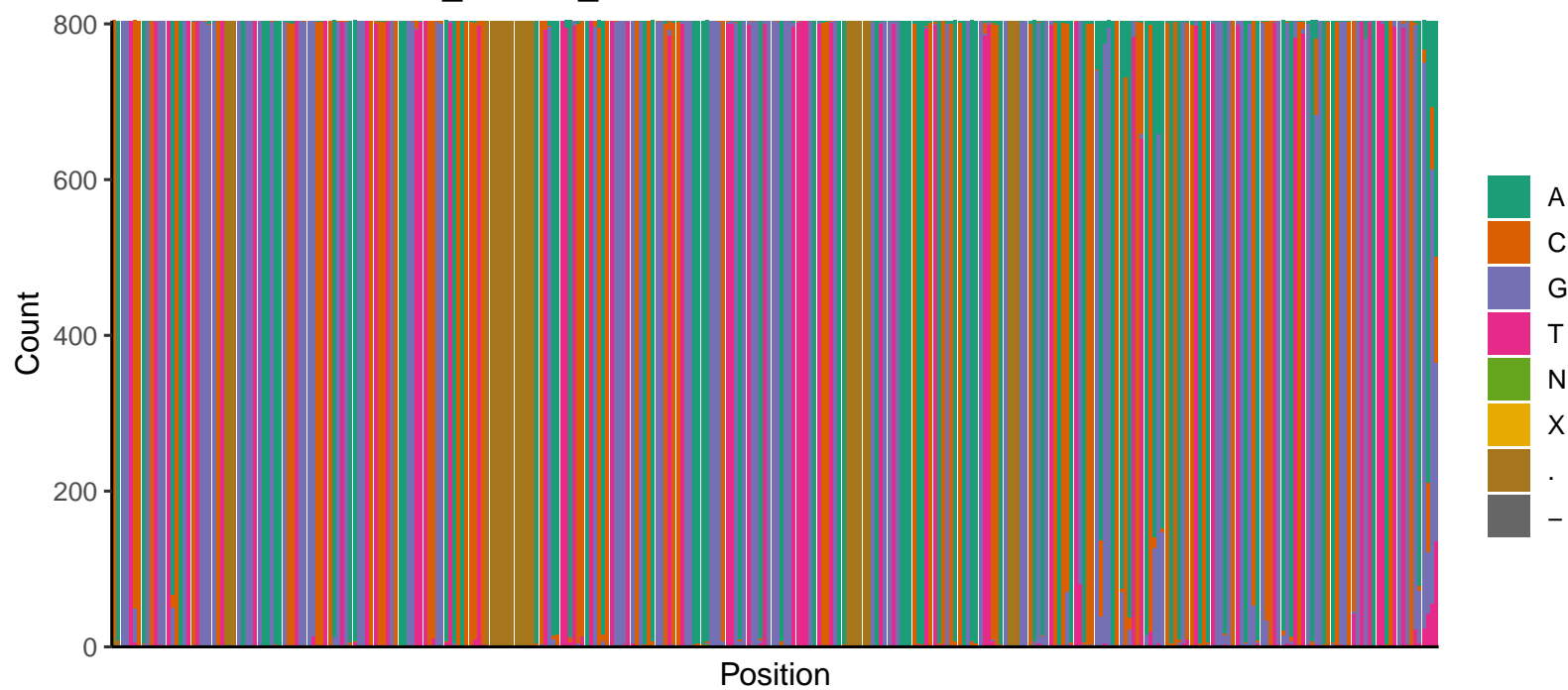
Gene IGHV6-1*01_A315G



Gene IGHV4-30-2*01_C315G



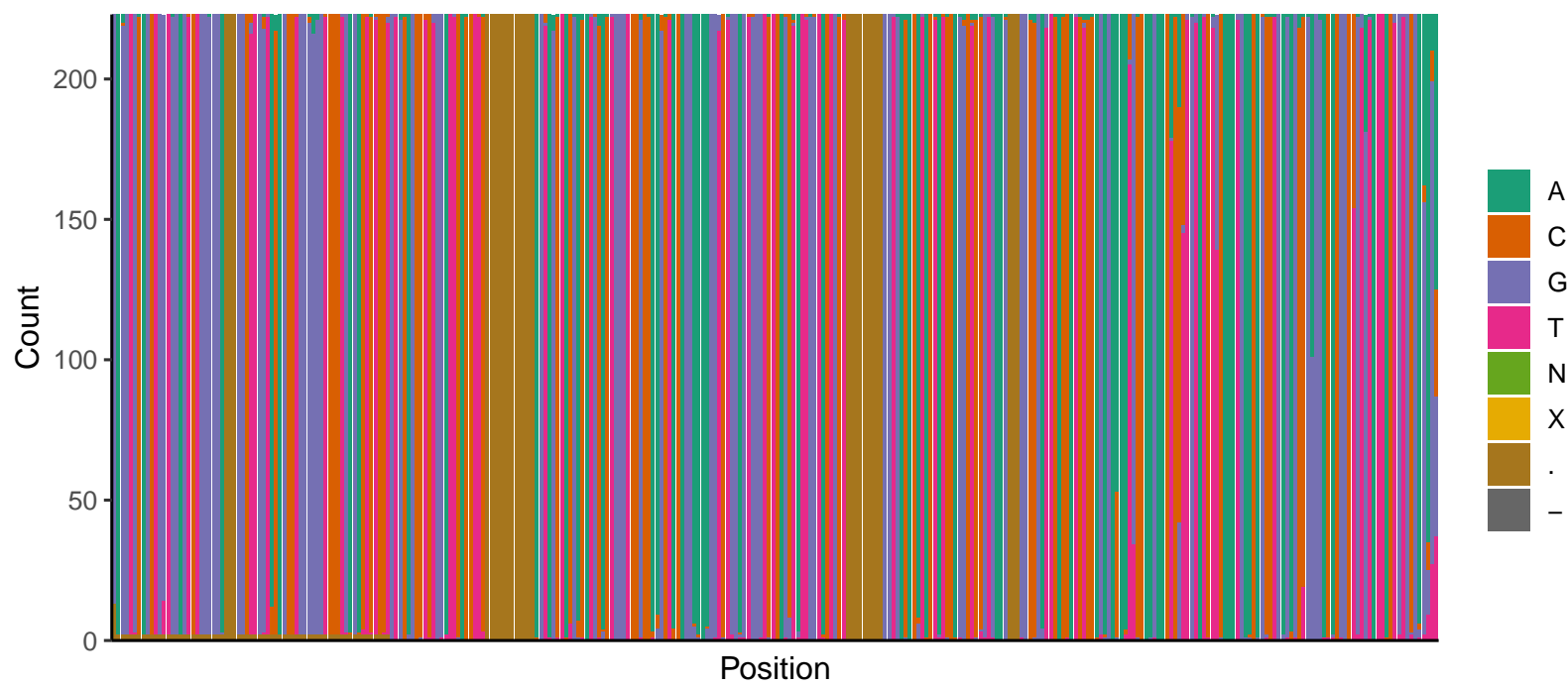
Gene IGHV1-24*01_A315G_C317G



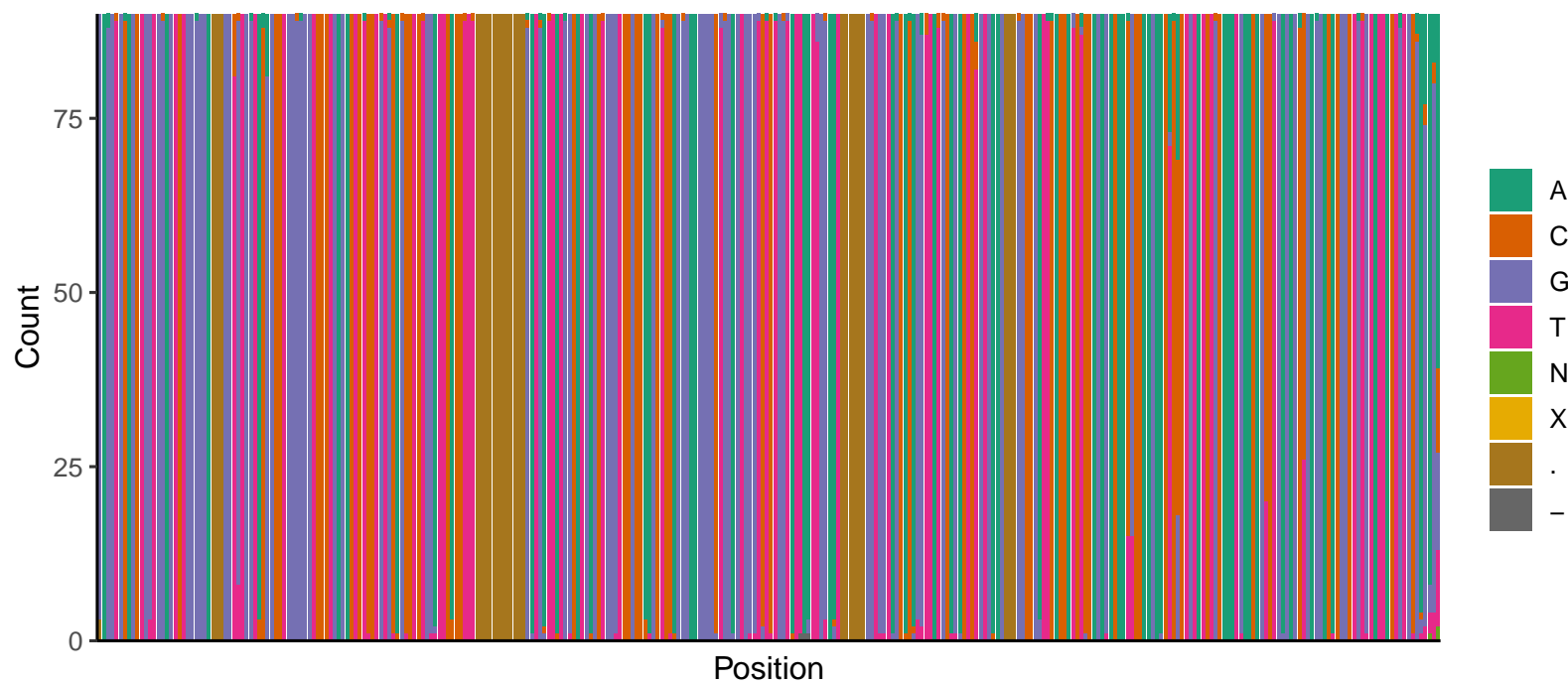
Gene IGHV1-45*02_A315G



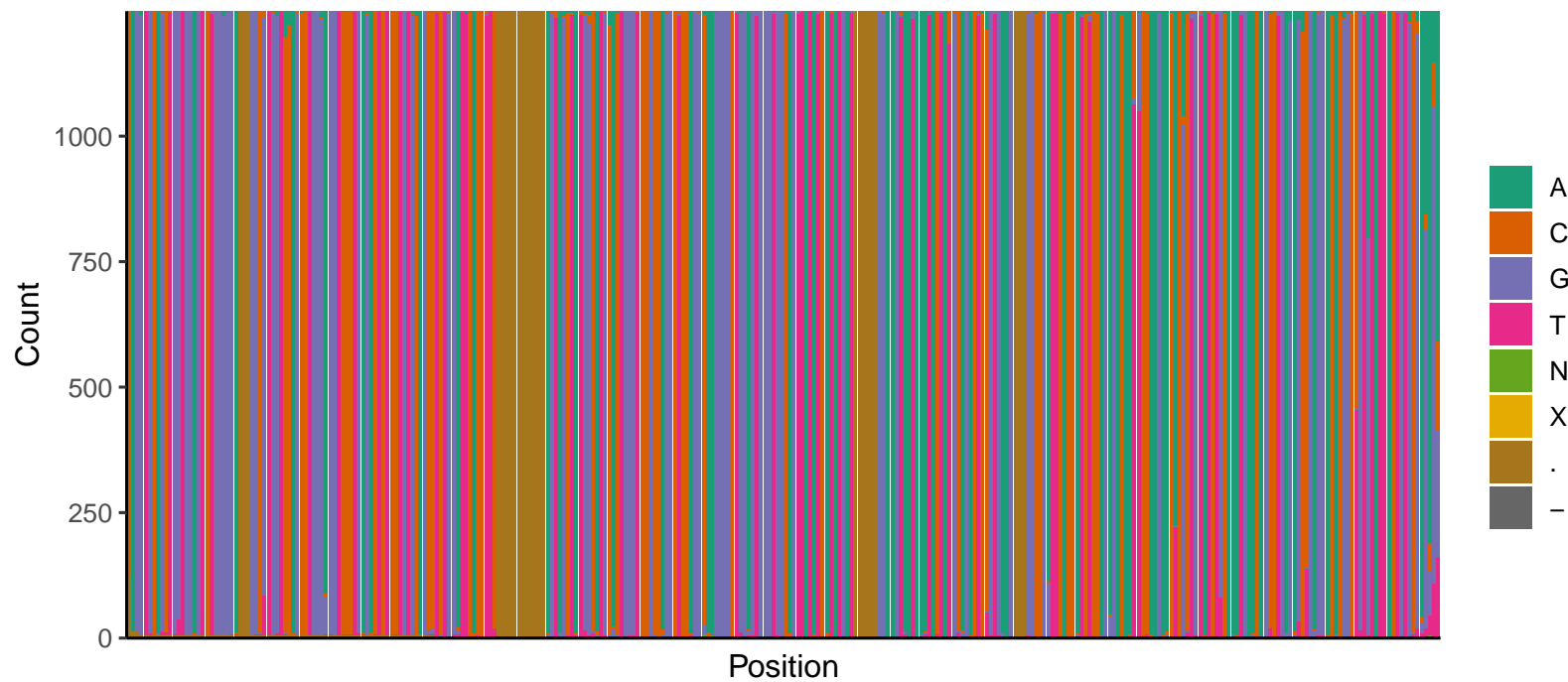
Gene IGHV3-13*01_A315G



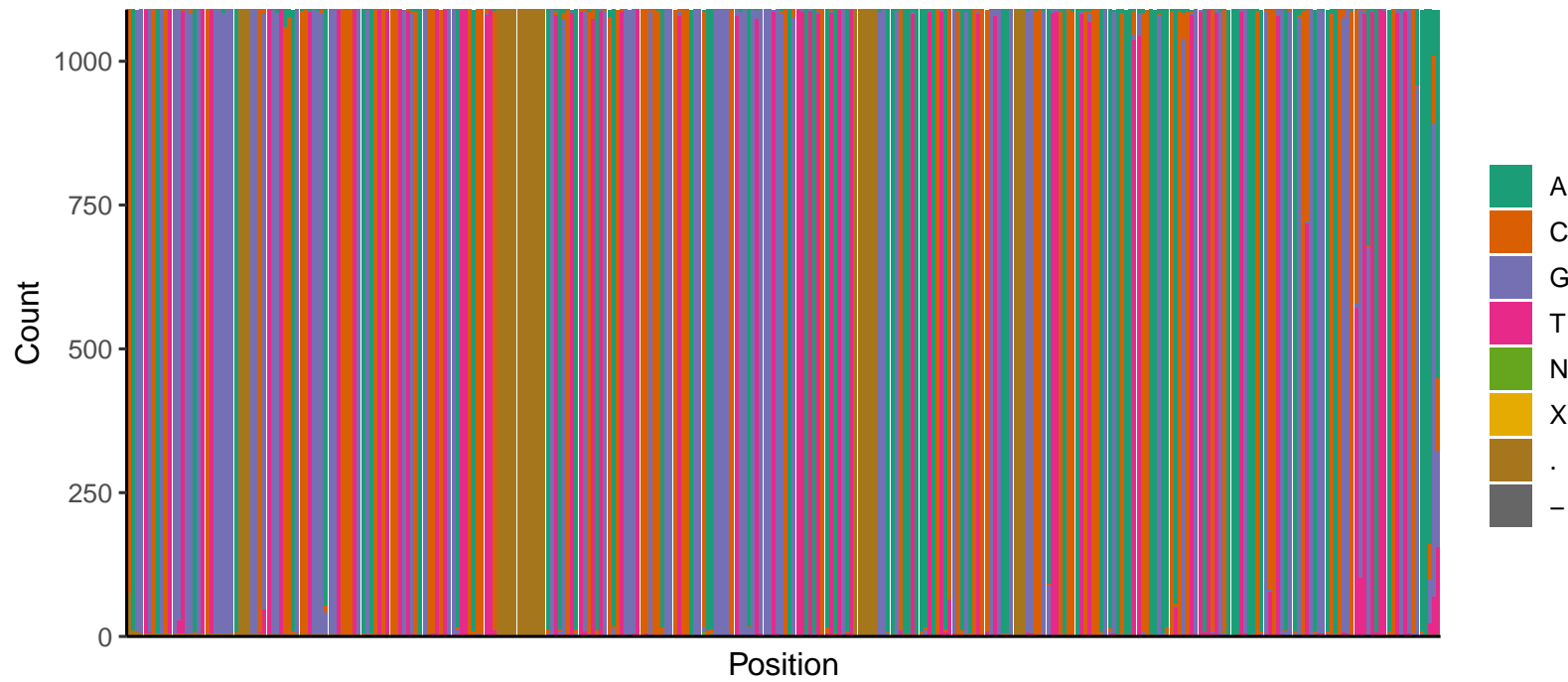
Gene IGHV3-20*04_C300T_T301G



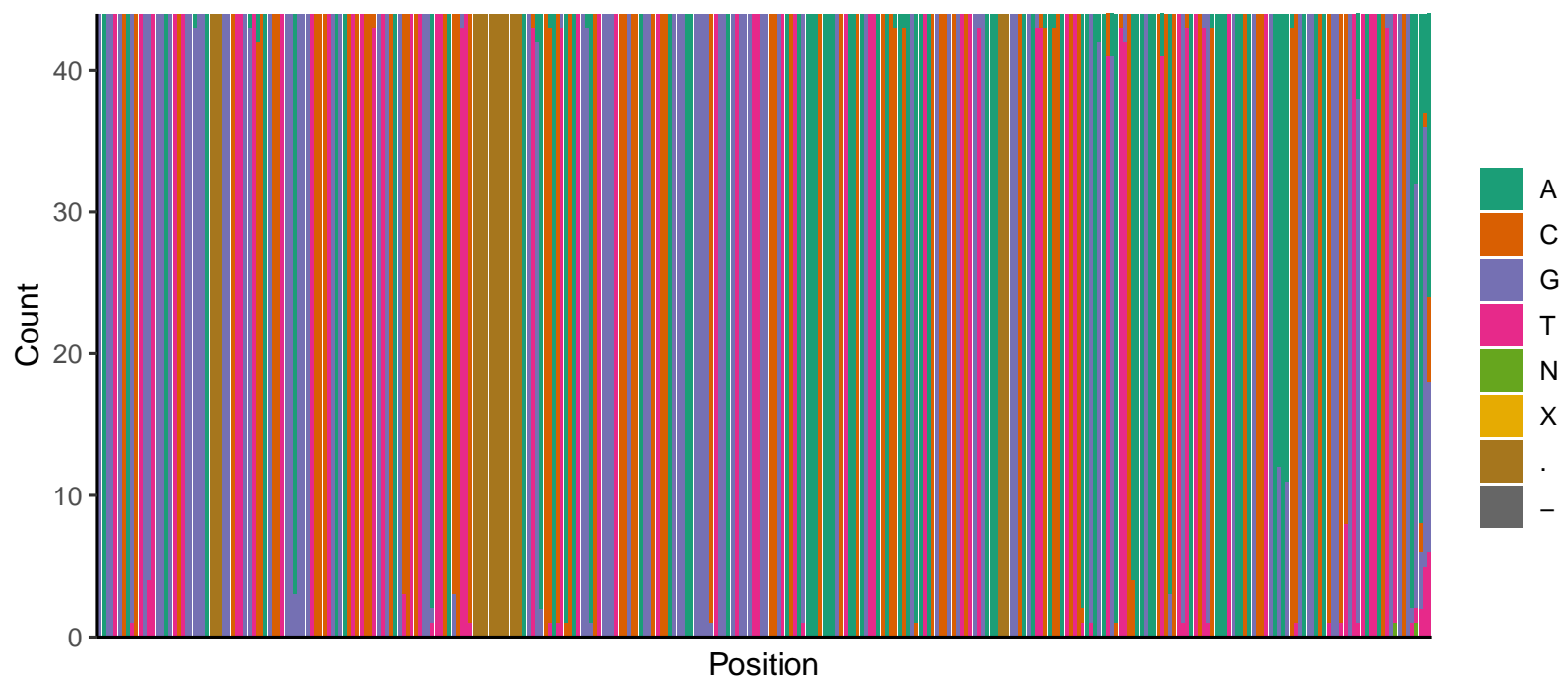
Gene IGHV3-30*03_T288C_T300C



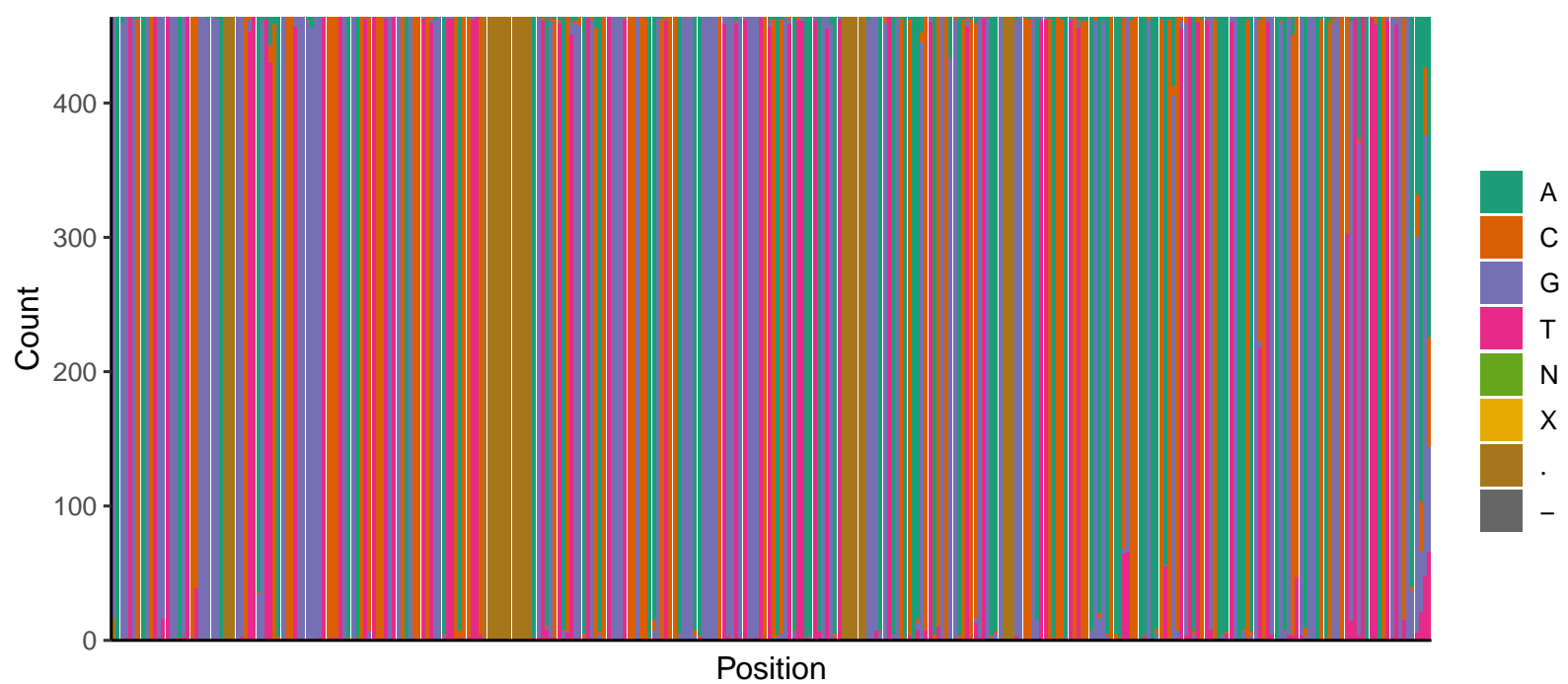
Gene IGHV3-30-3*02_G75C



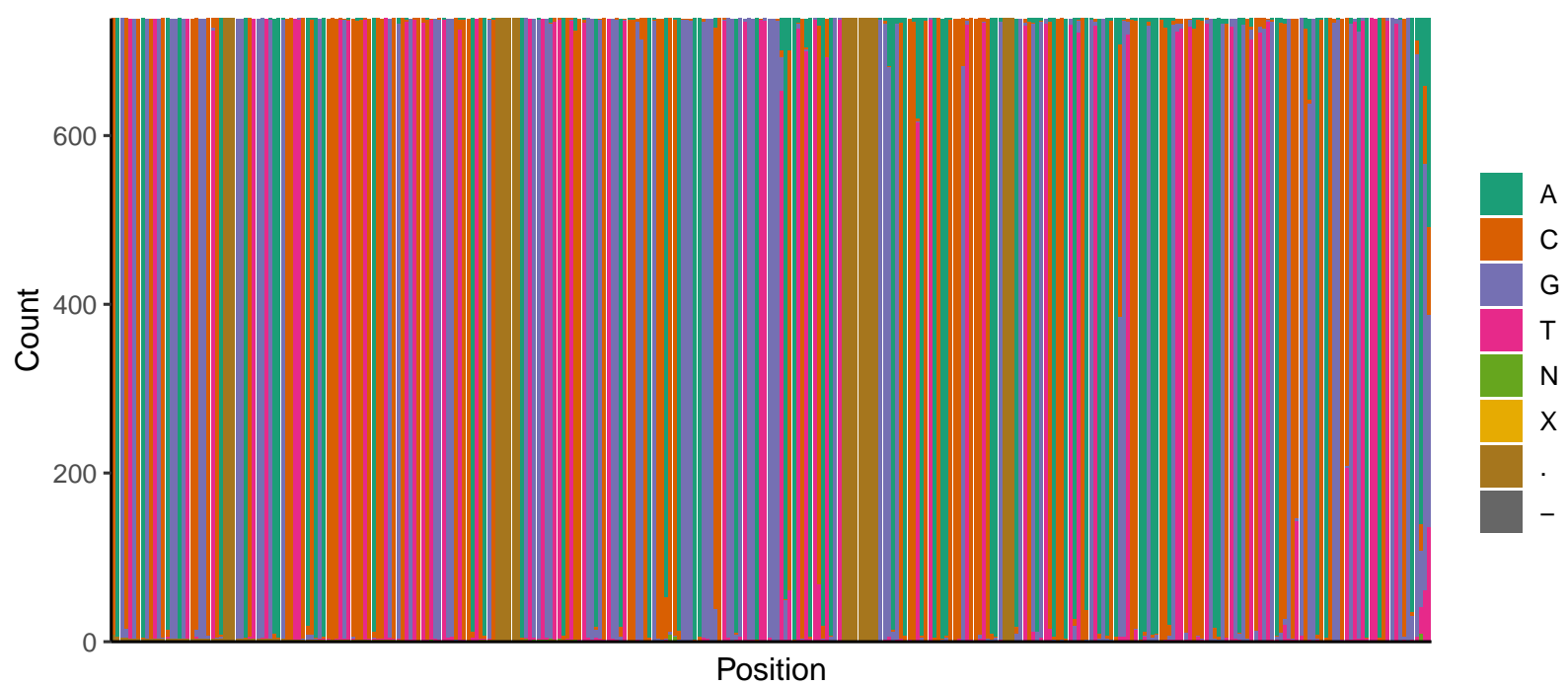
Gene IGHV3-72*01_T315G



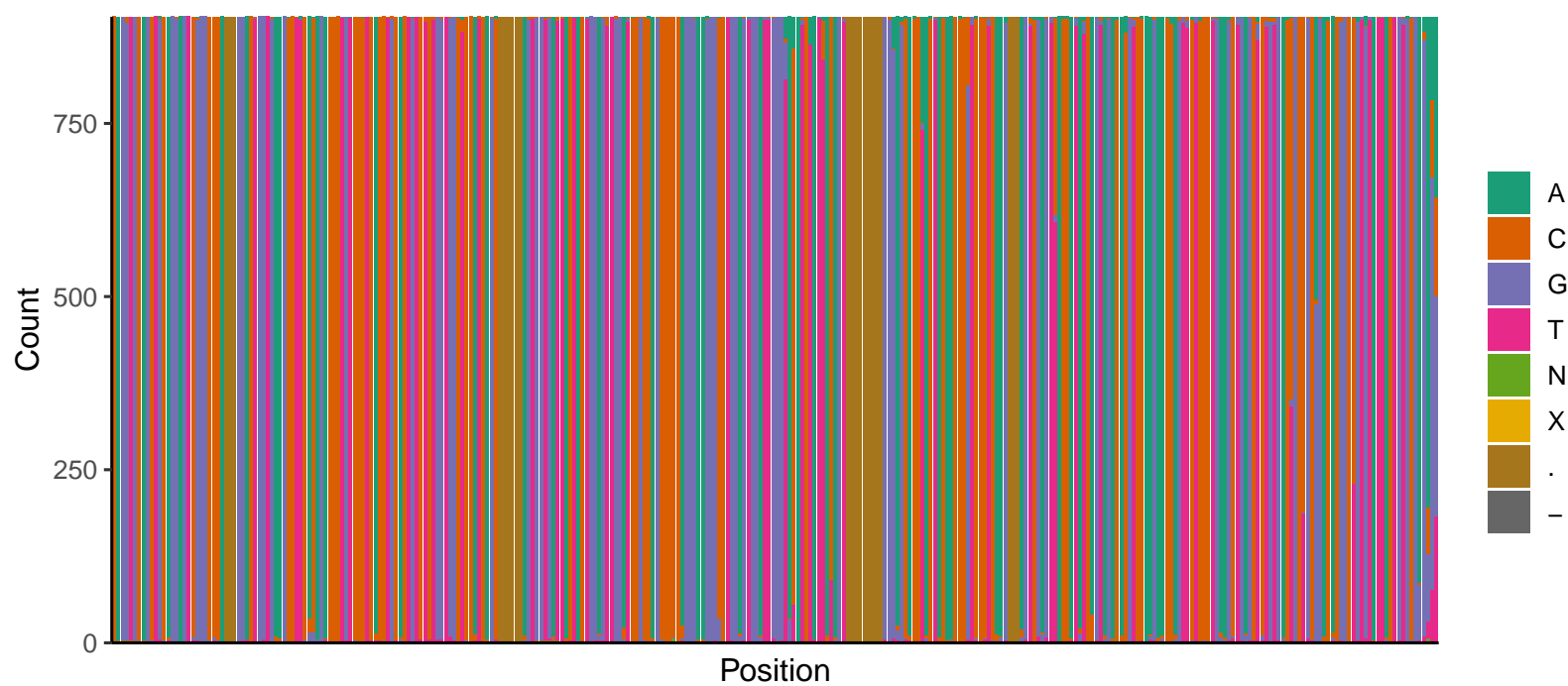
Gene IGHV3-74*01_A315G



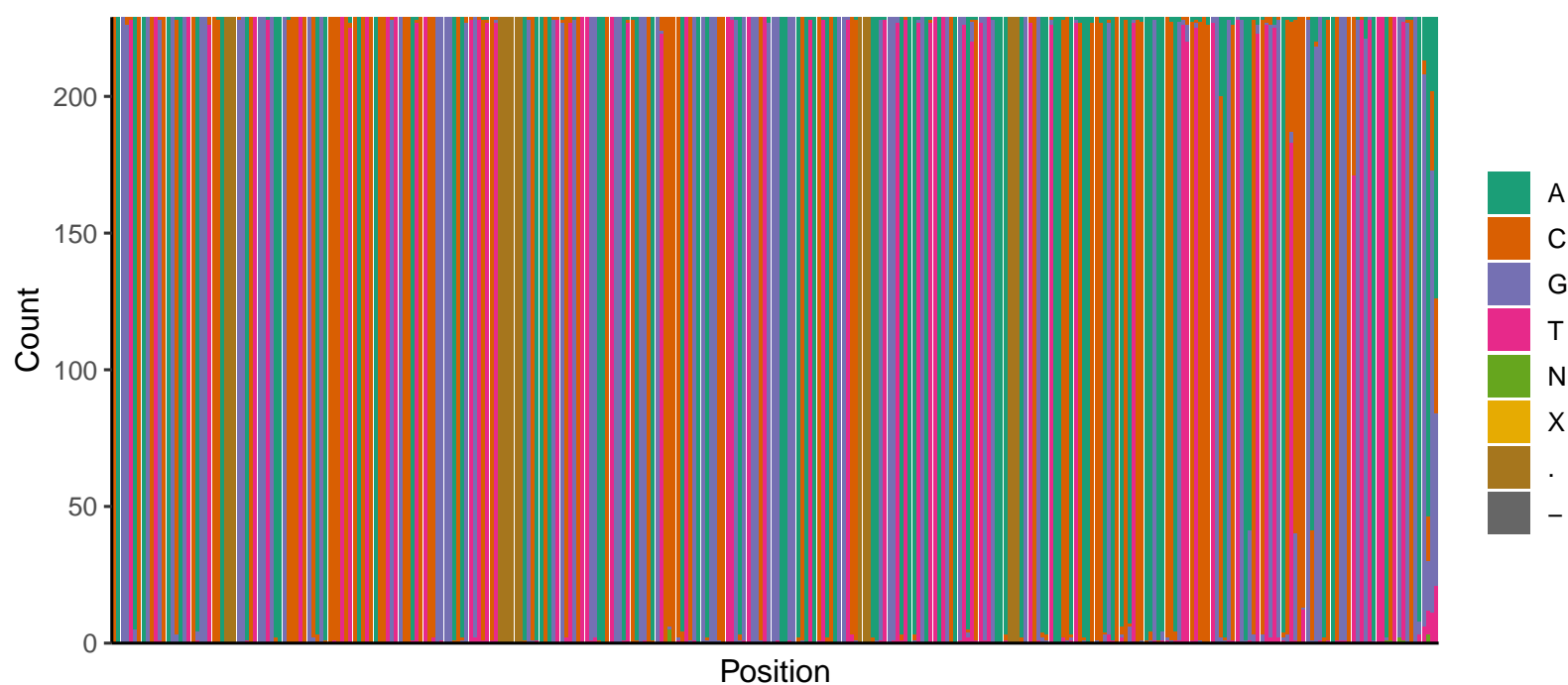
Gene IGHV4-30-2*01_C315G



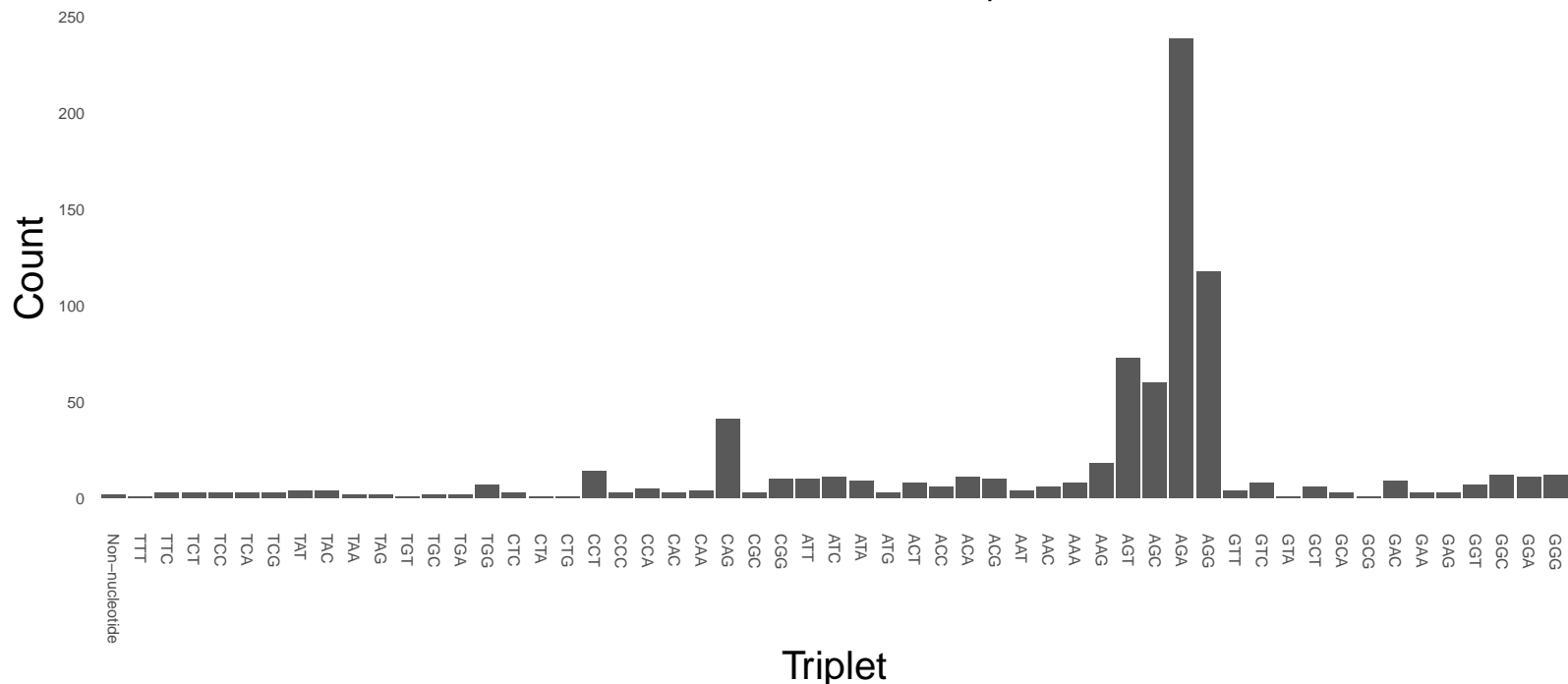
Gene IGHV4-30-4*01_C315G



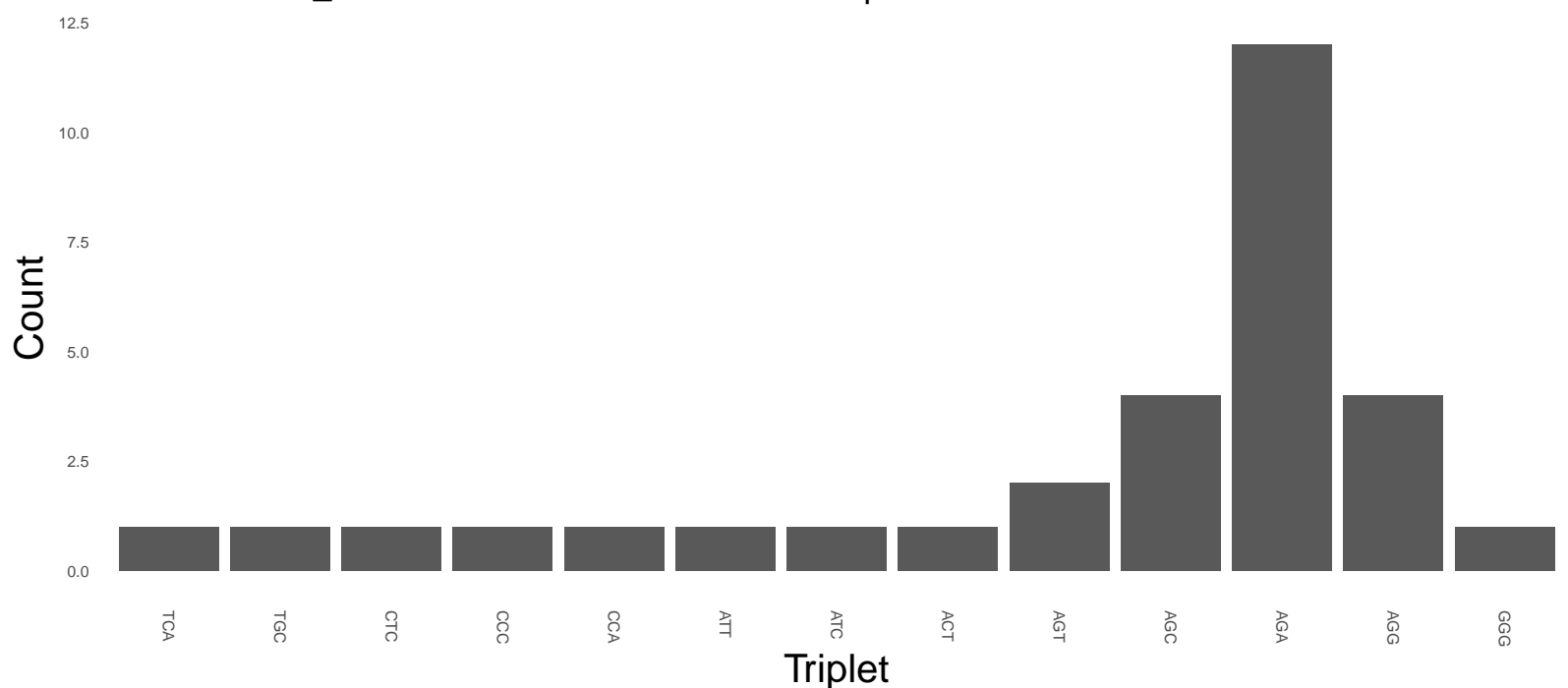
Gene IGHV6-1*01_A315G



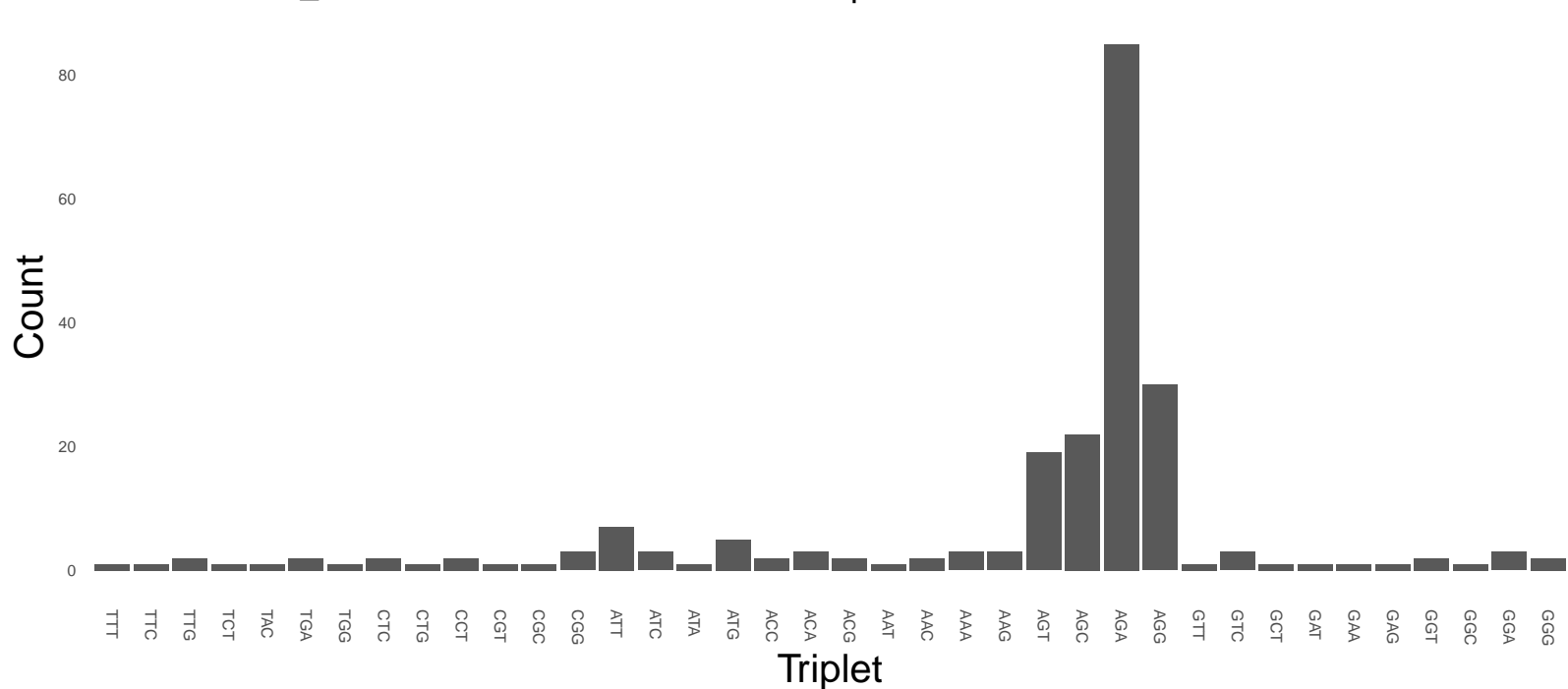
IGHV1-24*01_A315G- Final 3 nucleotides as a triplet



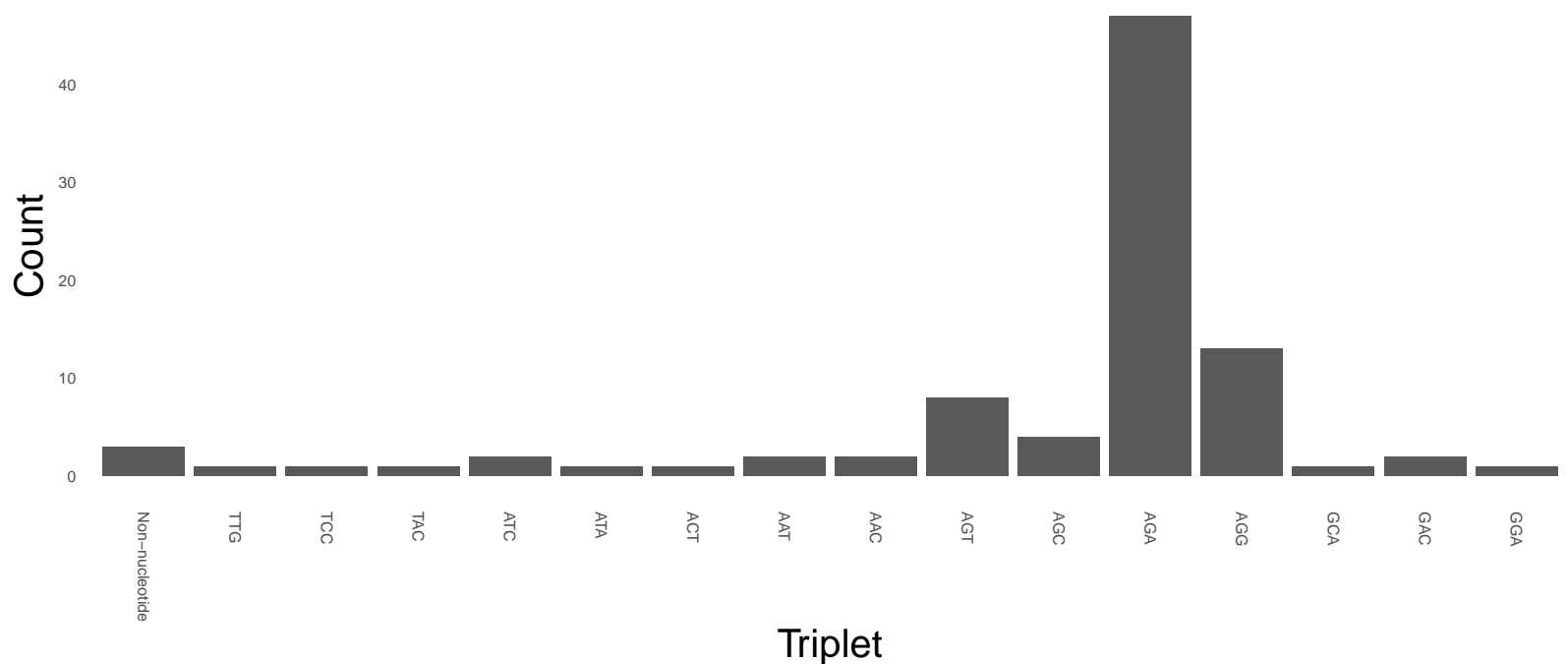
IGHV1-45*02_A315G- Final 3 nucleotides as a triplet



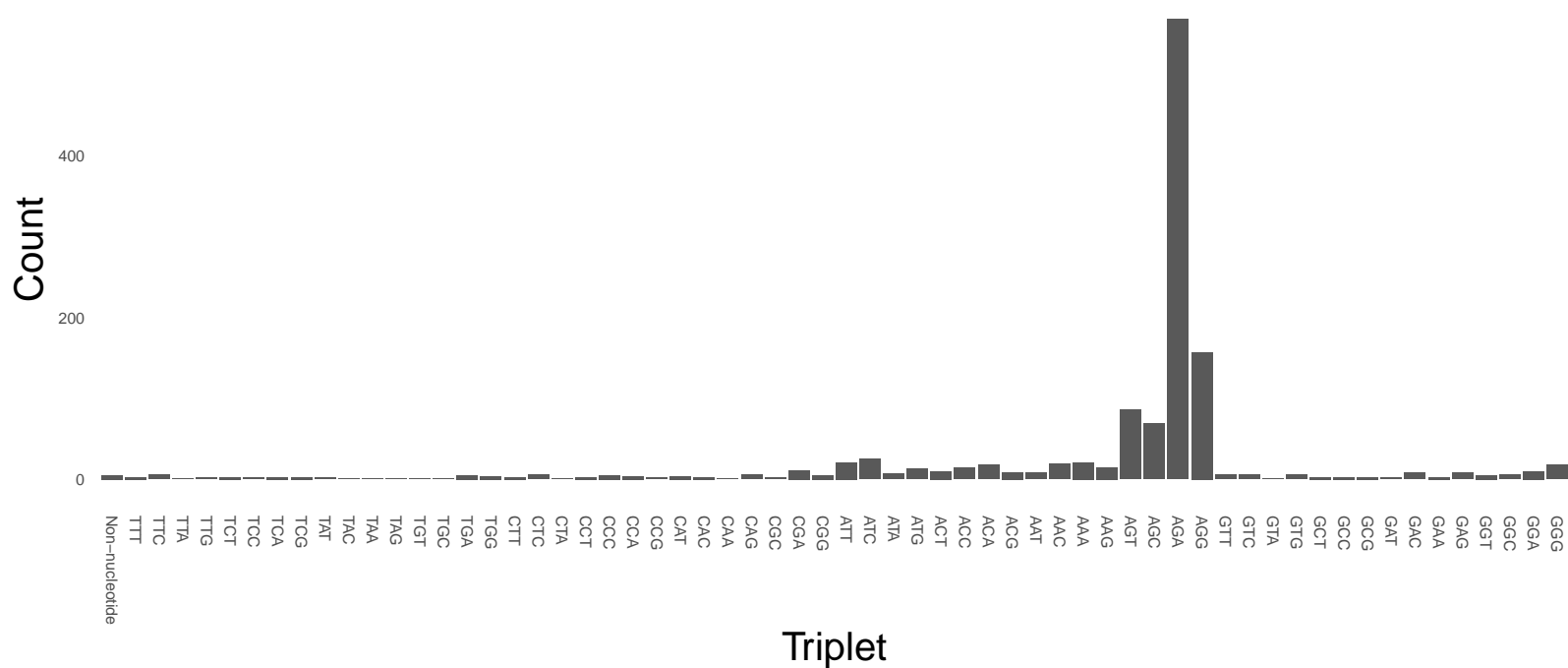
IGHV3-13*01_A315G- Final 3 nucleotides as a triplet



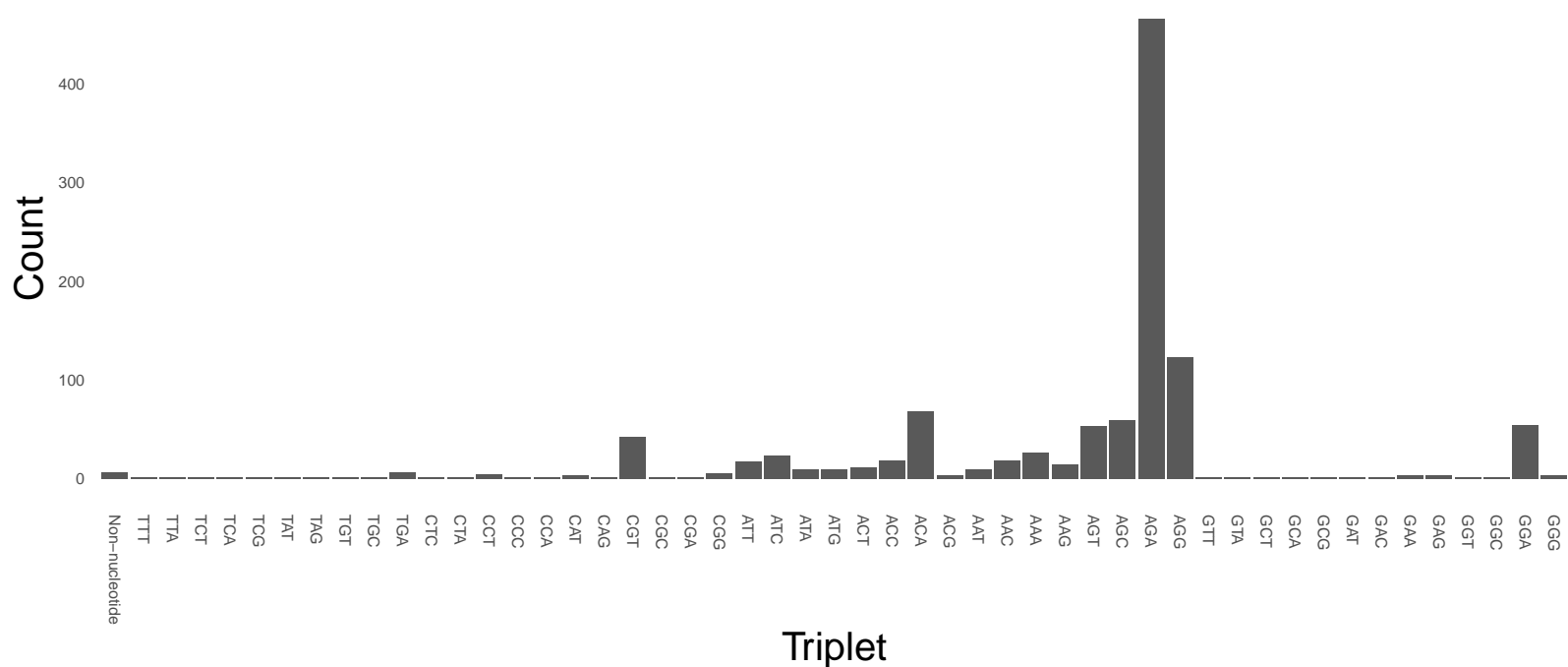
IGHV3–20*04_C300T_T301G– Final 3 nucleotides as a triplet



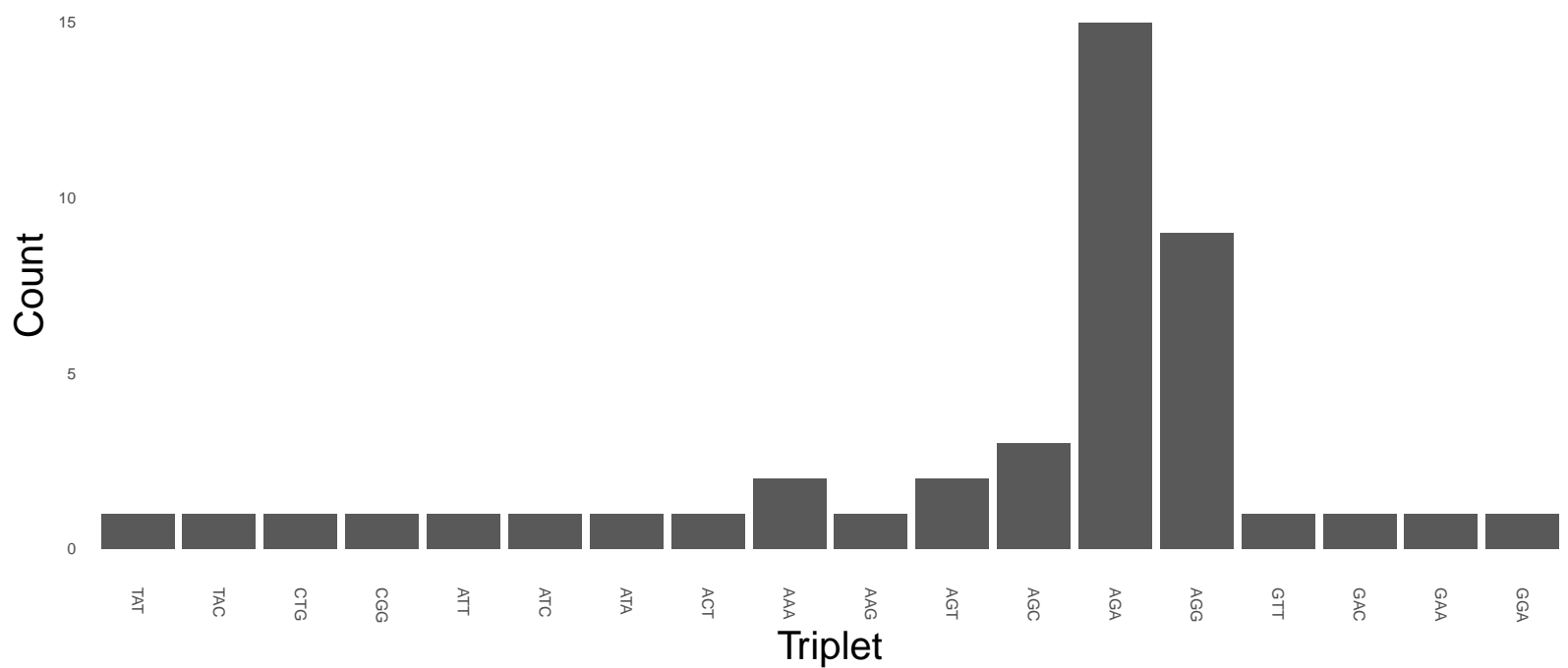
IGHV3–30*03_T288C_T300C– Final 3 nucleotides as a triplet



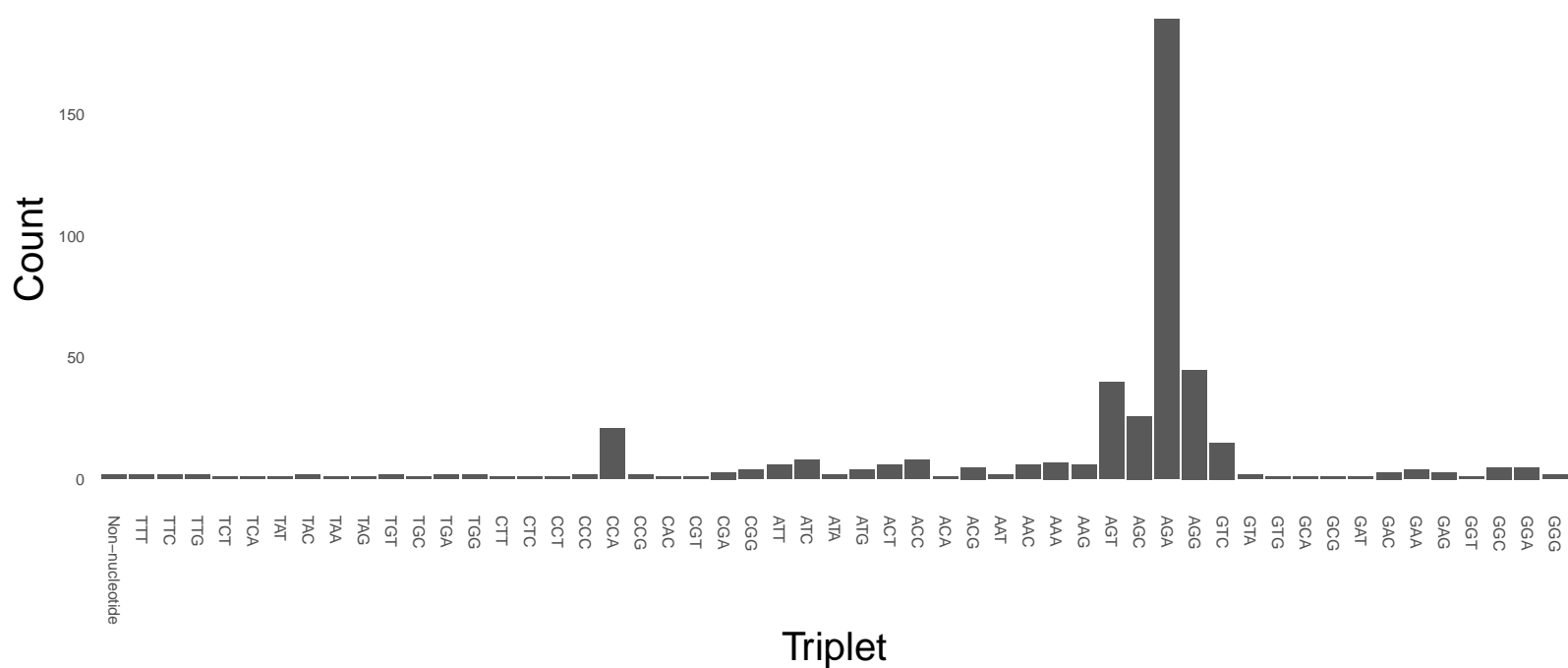
IGHV3–30–3*02_G75C– Final 3 nucleotides as a triplet



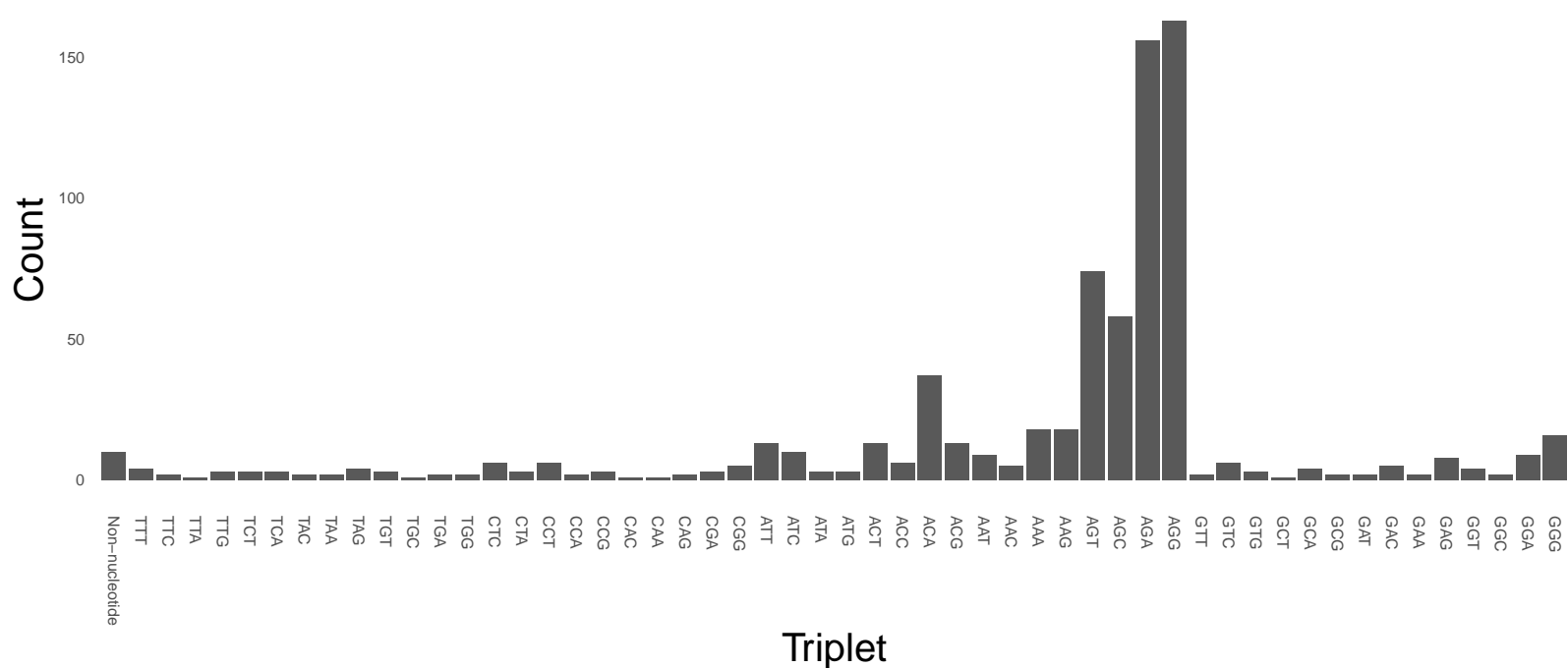
IGHV3-72*01_T315G- Final 3 nucleotides as a triplet



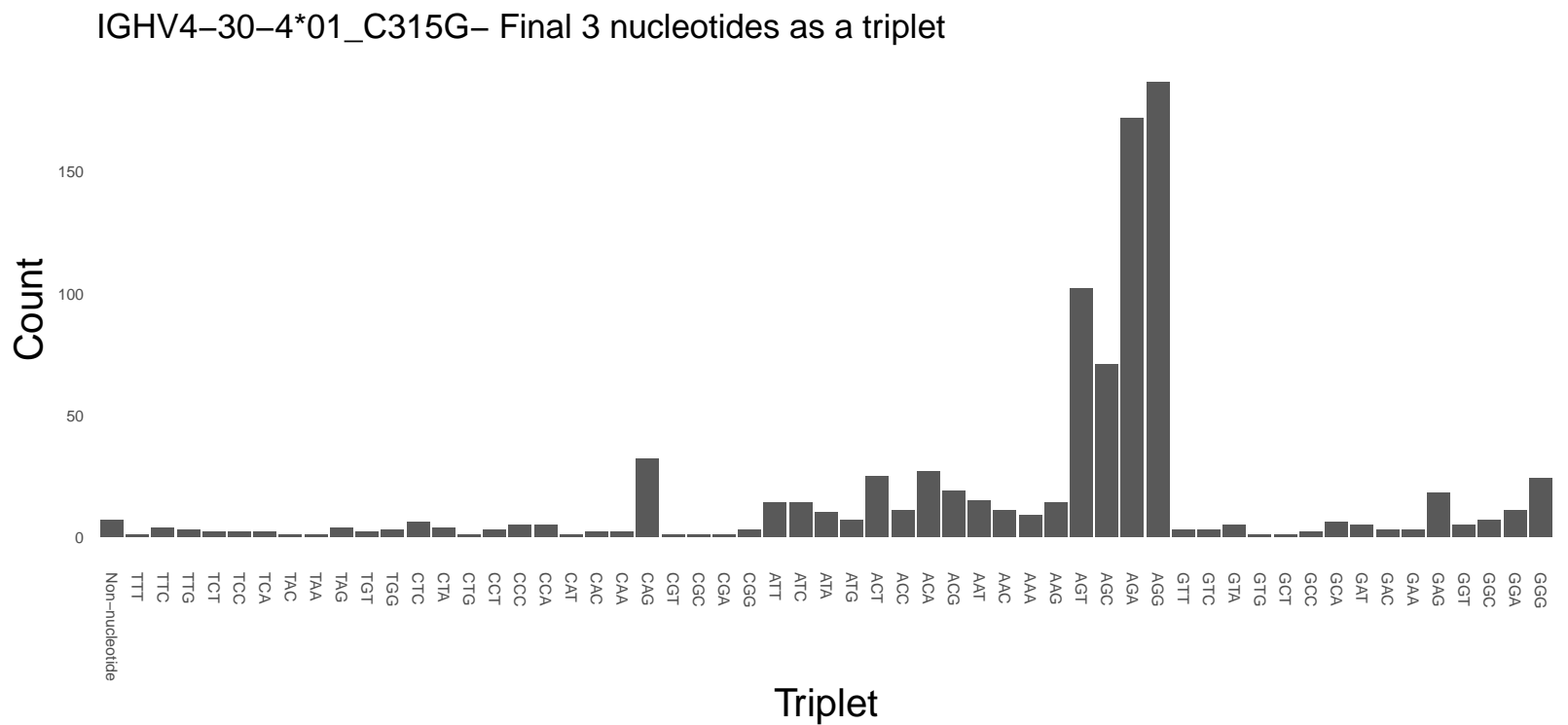
IGHV3-74*01_A315G- Final 3 nucleotides as a triplet



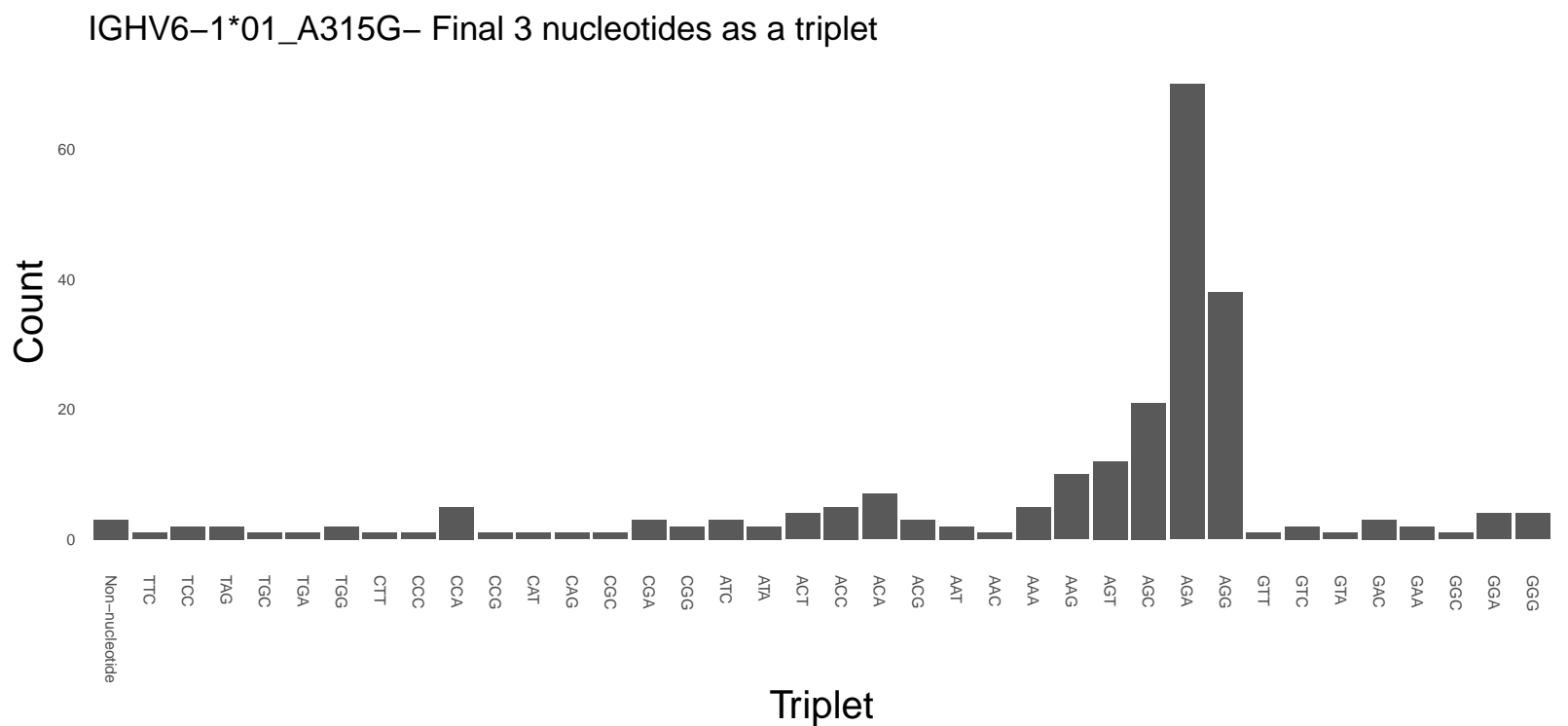
IGHV4-30-2*01_C315G- Final 3 nucleotides as a triplet



IGHV4-30-4*01_C315G- Final 3 nucleotides as a triplet

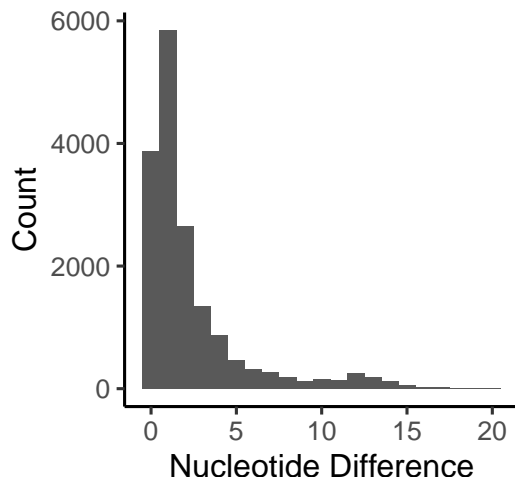


IGHV6-1*01_A315G- Final 3 nucleotides as a triplet



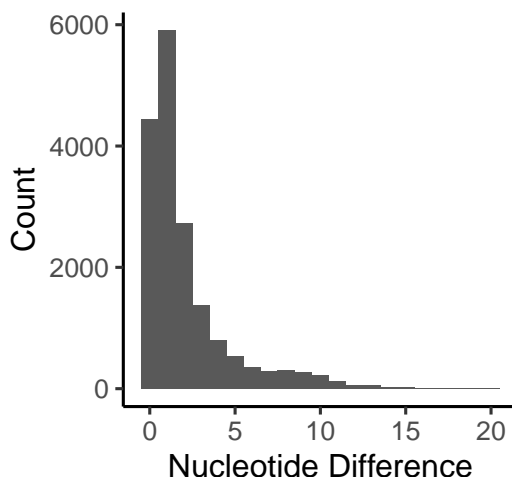
IGHV1-2*02

17007 sequences assigned
3872 (22.8%) exact matches, in which:
2737 unique CDR3
6 unique J



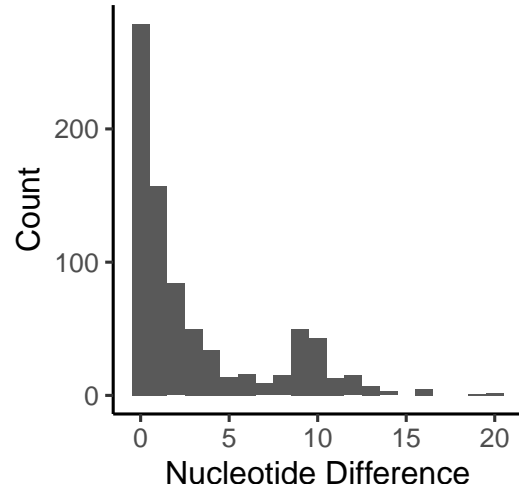
IGHV1-8*01

17632 sequences assigned
4445 (25.2%) exact matches, in which:
3271 unique CDR3
6 unique J



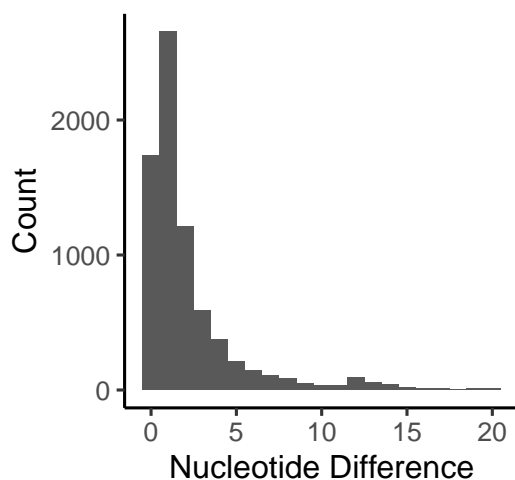
IGHV1-24*01_A315G_CS

804 sequences assigned
279 (34.7%) exact matches, in which:
275 unique CDR3
6 unique J



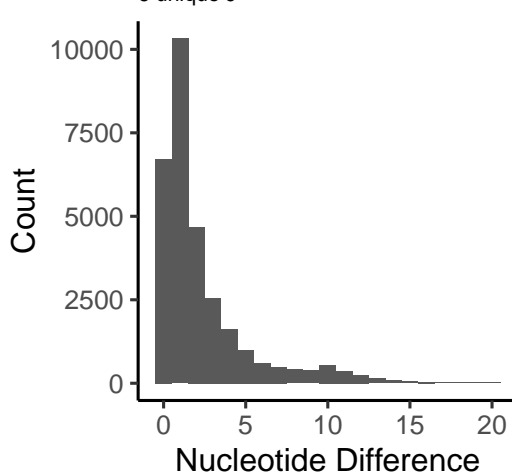
IGHV1-2*04

7533 sequences assigned
1738 (23.1%) exact matches, in which:
1249 unique CDR3
6 unique J



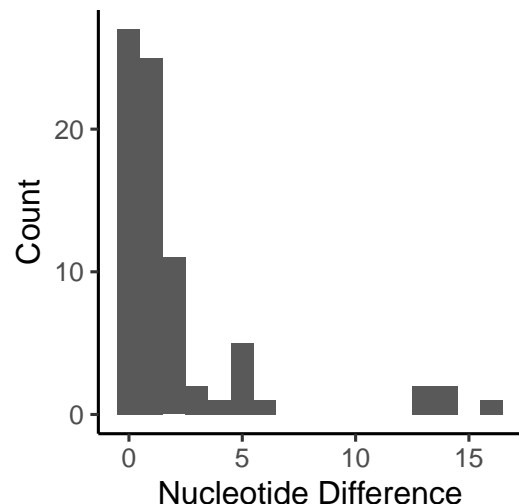
IGHV1-18*01

30451 sequences assigned
6711 (22%) exact matches, in which:
4833 unique CDR3
6 unique J



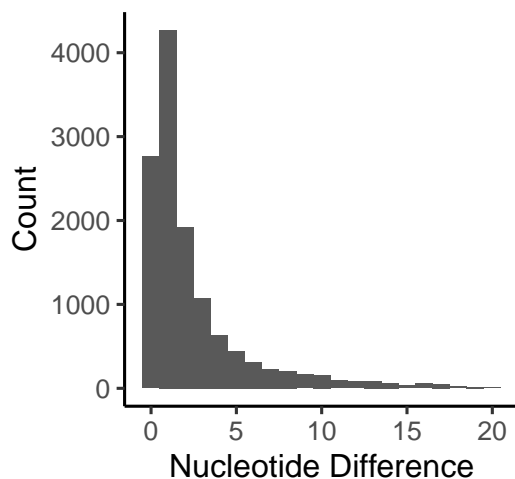
IGHV1-38-4*01

77 sequences assigned
27 (35.1%) exact matches, in which:
22 unique CDR3
4 unique J



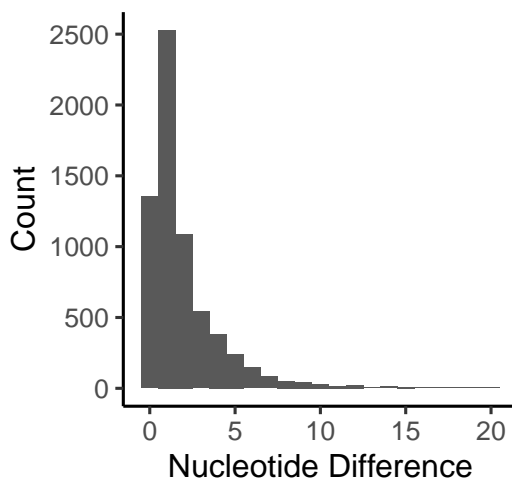
IGHV1-3*01

12786 sequences assigned
2761 (21.6%) exact matches, in which:
1966 unique CDR3
6 unique J



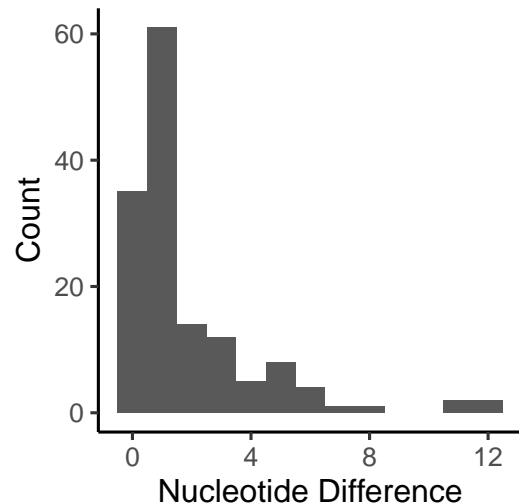
IGHV1-24*01

6735 sequences assigned
1354 (20.1%) exact matches, in which:
886 unique CDR3
6 unique J



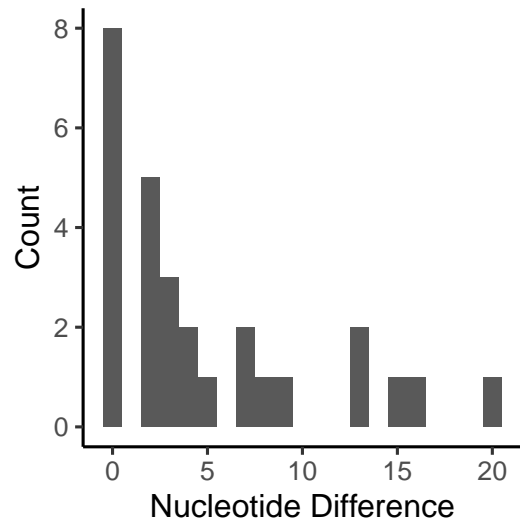
IGHV1-45*02

147 sequences assigned
35 (23.8%) exact matches, in which:
21 unique CDR3
5 unique J



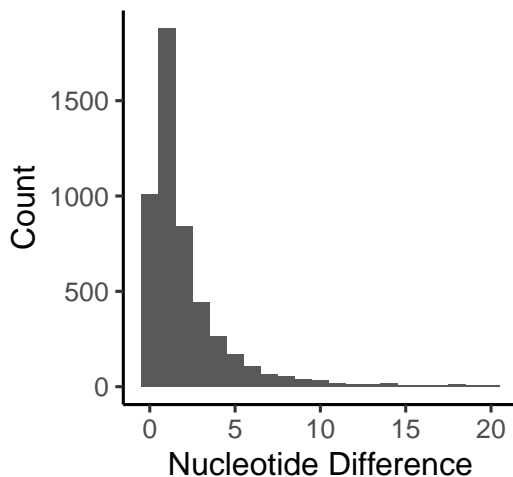
IGHV1-45*02_A315G

31 sequences assigned
8 (25.8%) exact matches, in which:
8 unique CDR3
3 unique J



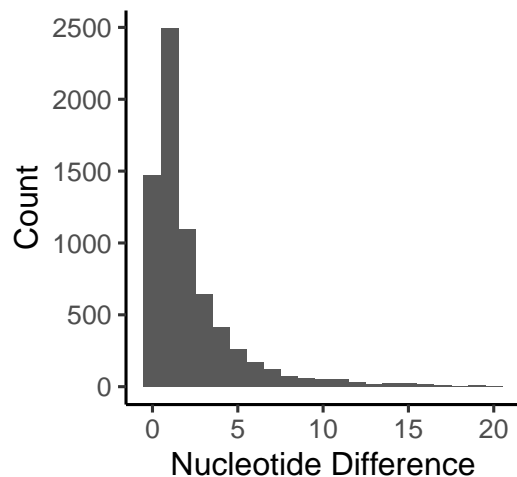
IGHV1-58*01

5056 sequences assigned
1012 (20%) exact matches, in which:
667 unique CDR3
6 unique J



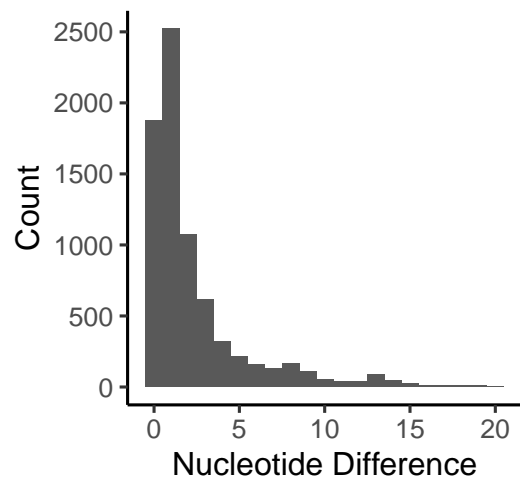
IGHV2-5*02

7107 sequences assigned
1469 (20.7%) exact matches, in which:
1036 unique CDR3
6 unique J



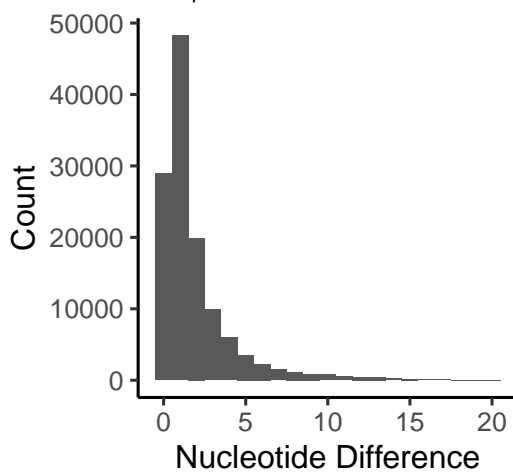
IGHV1-46*01

7581 sequences assigned
1875 (24.7%) exact matches, in which:
1385 unique CDR3
6 unique J



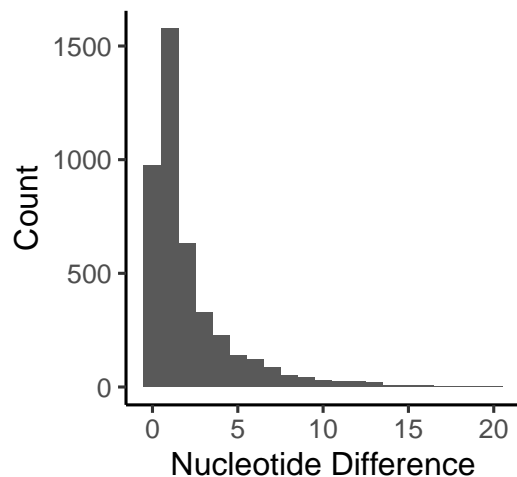
IGHV1-69*01

126081 sequences assigned
28930 (22.9%) exact matches, in which:
20149 unique CDR3
6 unique J



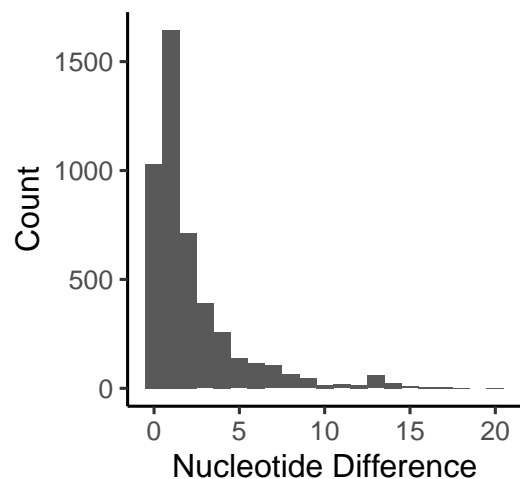
IGHV2-26*01

4383 sequences assigned
974 (22.2%) exact matches, in which:
705 unique CDR3
5 unique J



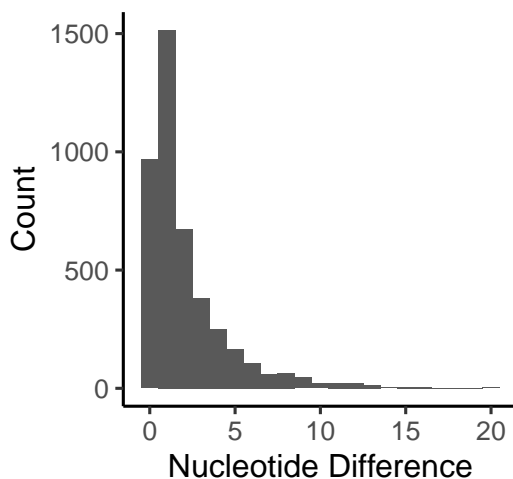
IGHV1-46*03

4686 sequences assigned
1030 (22%) exact matches, in which:
712 unique CDR3
6 unique J



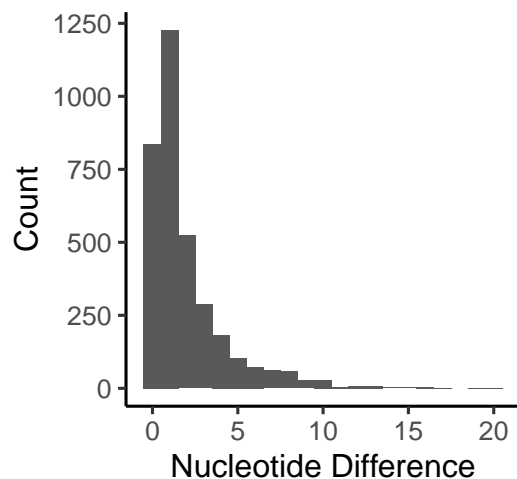
IGHV2-5*01

4359 sequences assigned
967 (22.2%) exact matches, in which:
687 unique CDR3
6 unique J



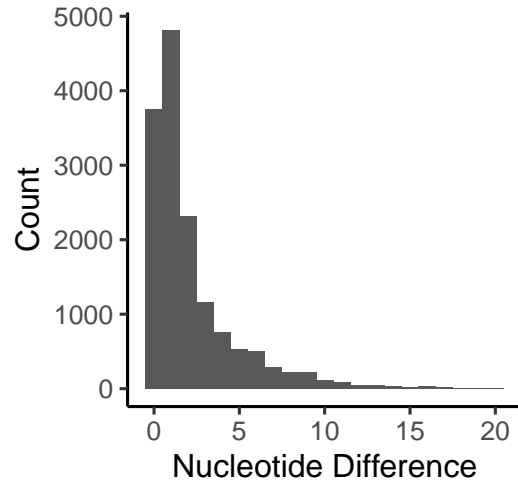
IGHV2-70*01

3480 sequences assigned
836 (24%) exact matches, in which:
570 unique CDR3
5 unique J



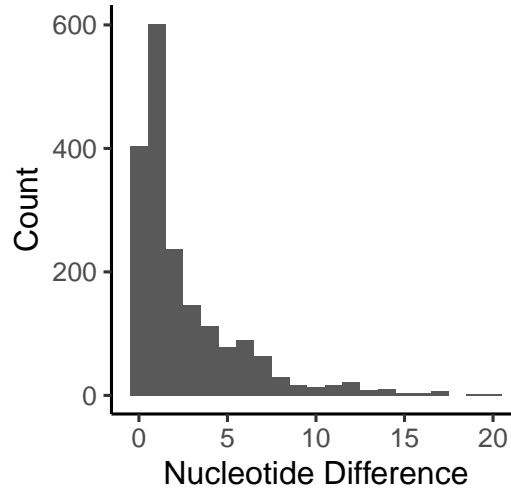
IGHV3-7*01

15119 sequences assigned
3753 (24.8%) exact matches, in which:
2807 unique CDR3
6 unique J



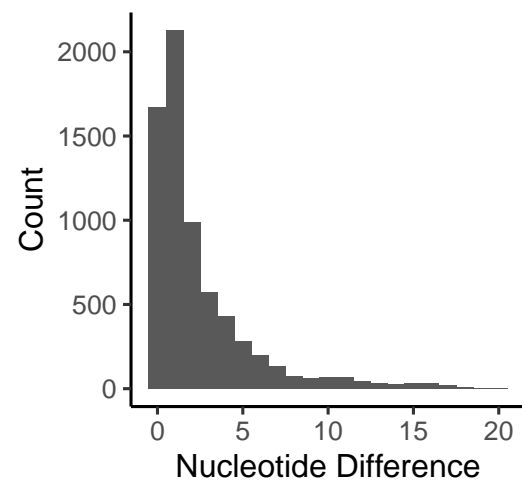
IGHV3-13*01

1879 sequences assigned
404 (21.5%) exact matches, in which:
270 unique CDR3
5 unique J



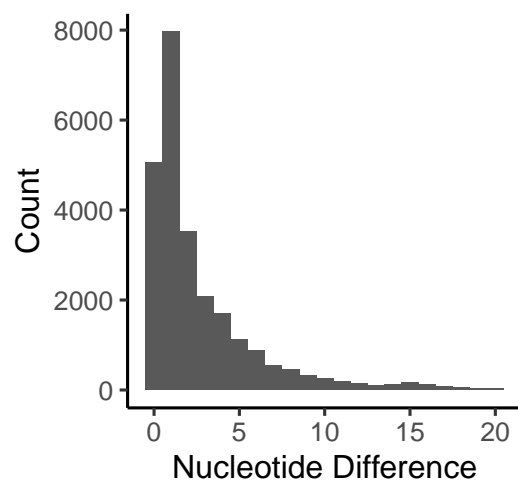
IGHV3-15*07

6939 sequences assigned
1669 (24.1%) exact matches, in which:
1224 unique CDR3
6 unique J



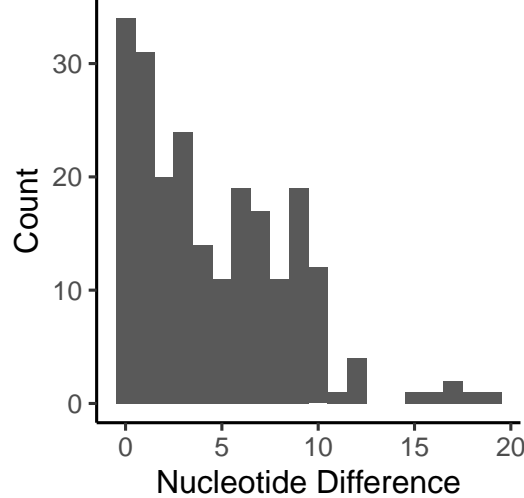
IGHV3-9*01

25143 sequences assigned
5052 (20.1%) exact matches, in which:
3562 unique CDR3
6 unique J



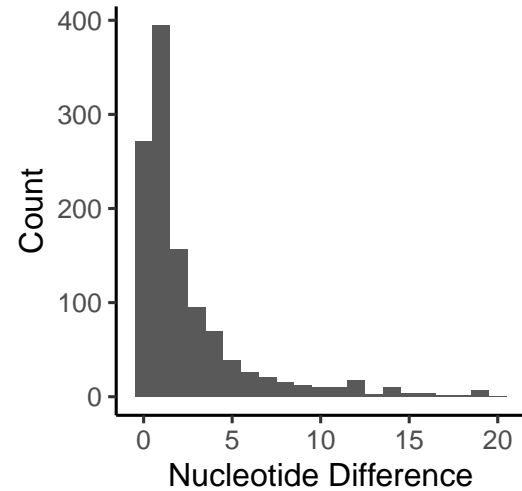
IGHV3-13*01_A315G

223 sequences assigned
34 (15.2%) exact matches, in which:
33 unique CDR3
6 unique J



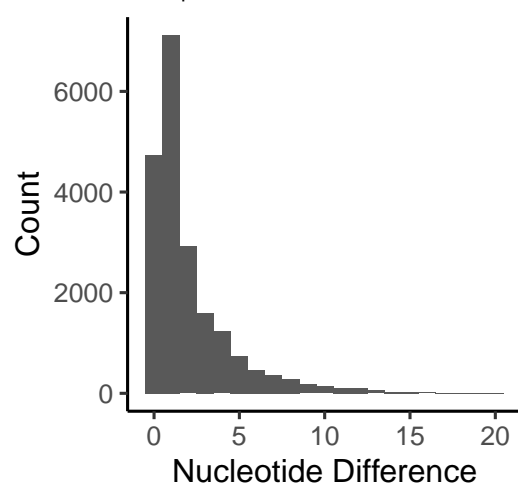
IGHV3-20*01

1182 sequences assigned
271 (22.9%) exact matches, in which:
196 unique CDR3
5 unique J



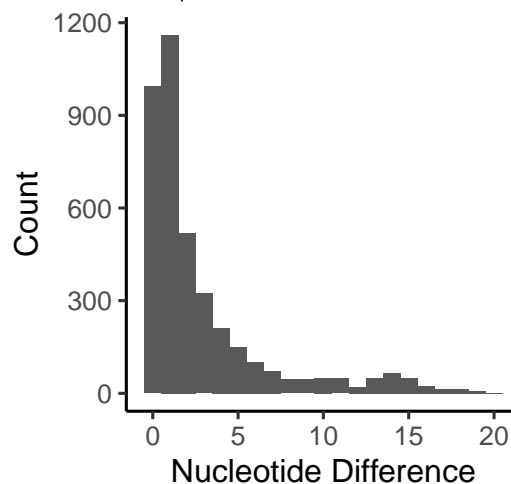
IGHV3-11*01

20322 sequences assigned
4739 (23.3%) exact matches, in which:
3347 unique CDR3
6 unique J



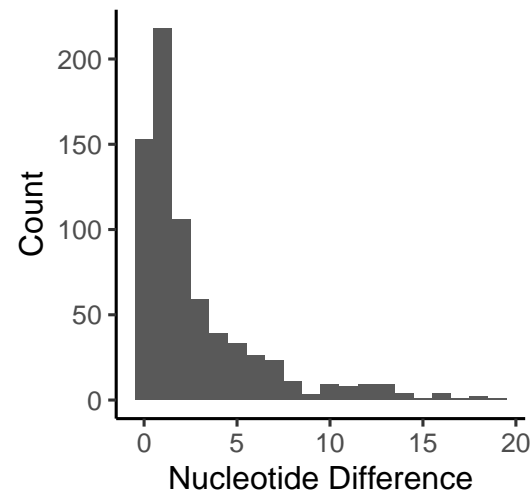
IGHV3-15*01

4012 sequences assigned
994 (24.8%) exact matches, in which:
710 unique CDR3
5 unique J



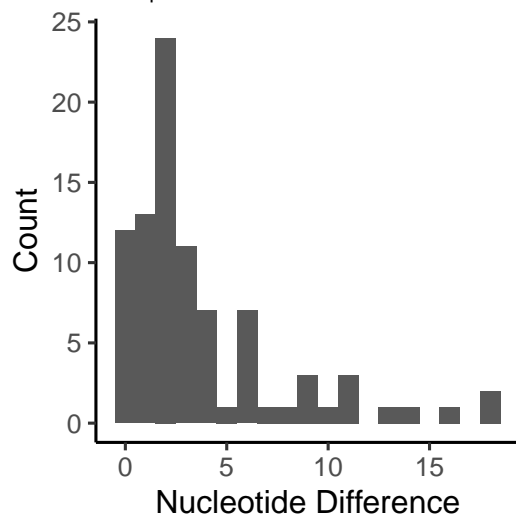
IGHV3-20*04

727 sequences assigned
153 (21%) exact matches, in which:
109 unique CDR3
4 unique J



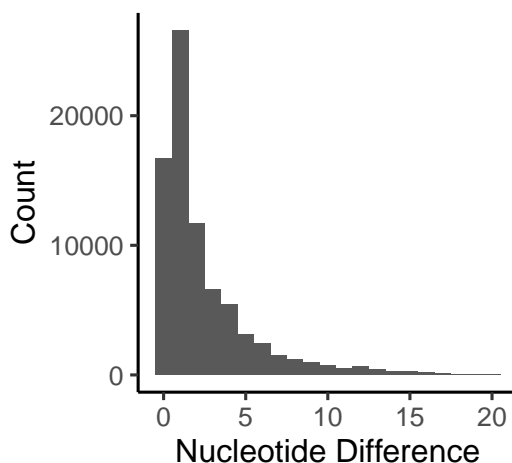
IGHV3-20*04_C300T_T3C1

90 sequences assigned
12 (13.3%) exact matches, in which:
12 unique CDR3
3 unique J



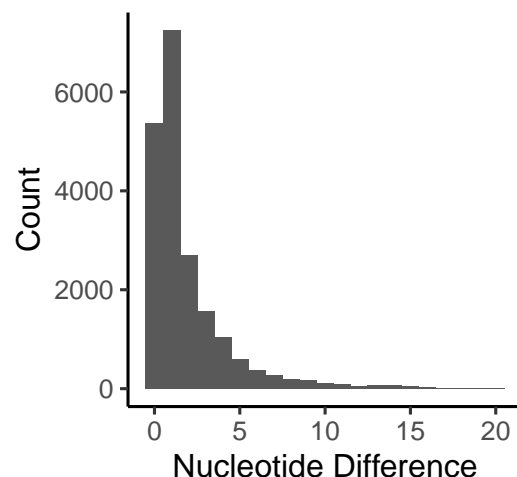
IGHV3-23*01

80201 sequences assigned
16686 (20.8%) exact matches, in which:
11853 unique CDR3
6 unique J



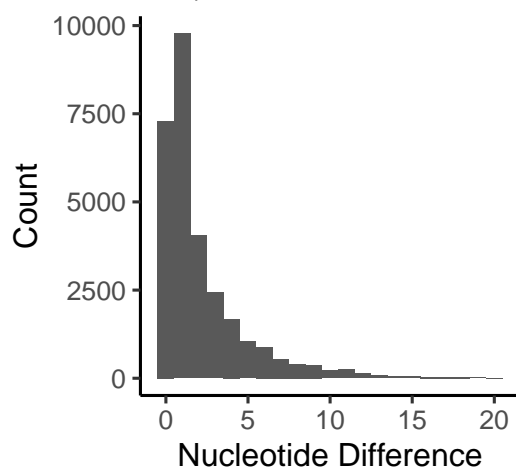
IGHV3-30*18

20106 sequences assigned
5368 (26.7%) exact matches, in which:
3800 unique CDR3
6 unique J



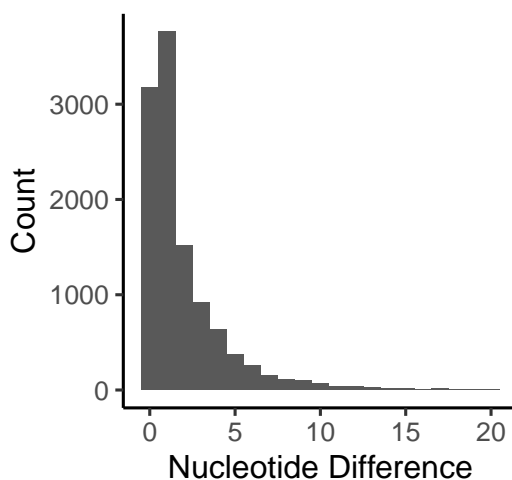
IGHV3-21*01

29616 sequences assigned
7300 (24.6%) exact matches, in which:
5228 unique CDR3
6 unique J



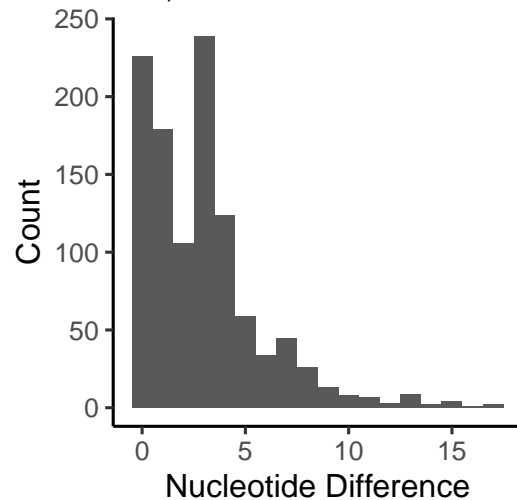
IGHV3-30*01

11316 sequences assigned
3179 (28.1%) exact matches, in which:
2318 unique CDR3
6 unique J



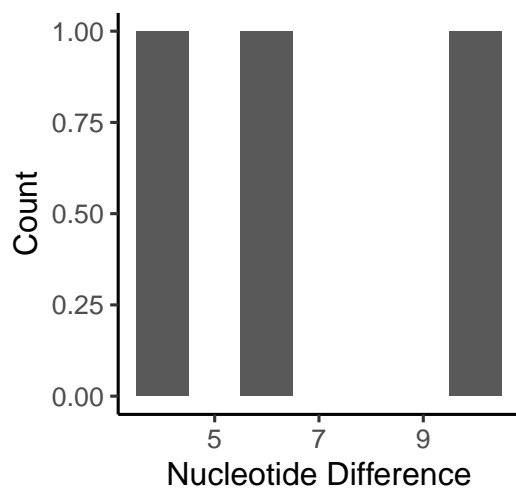
IGHV3-30-3*02_G75C

1090 sequences assigned
226 (20.7%) exact matches, in which:
209 unique CDR3
6 unique J



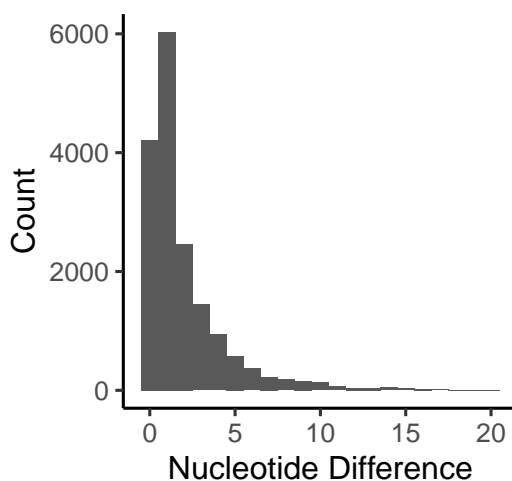
IGHV3-22*02

3 sequences assigned
No exact matches.



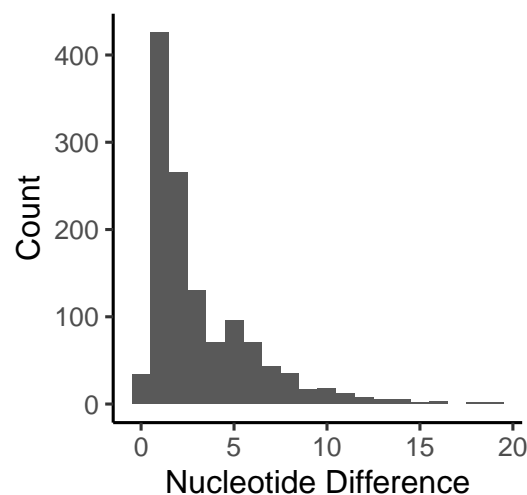
IGHV3-30-3*01

17152 sequences assigned
4214 (24.6%) exact matches, in which:
2948 unique CDR3
6 unique J



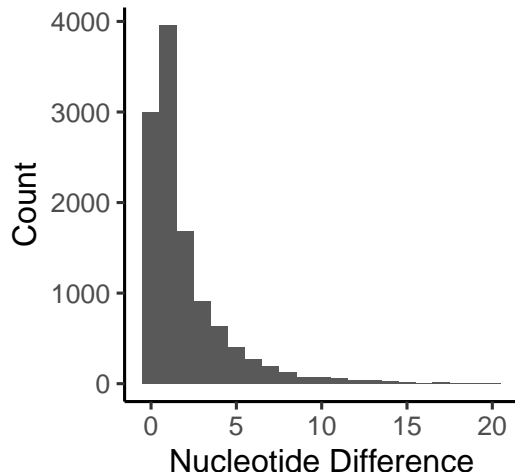
IGHV3-30*03_T288C_T3

1249 sequences assigned
34 (2.7%) exact matches, in which:
34 unique CDR3
4 unique J



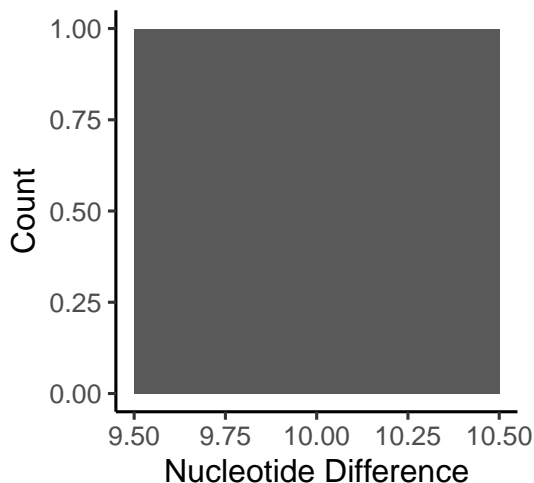
IGHV3-33*01

11623 sequences assigned
3001 (25.8%) exact matches, in which:
2152 unique CDR3
6 unique J



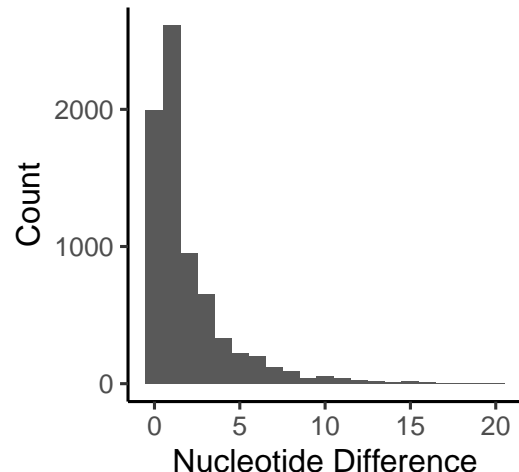
IGHV3-38*02

1 sequences assigned
No exact matches.



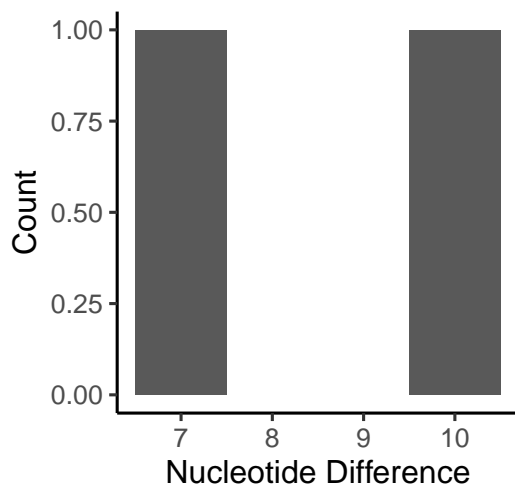
IGHV3-48*02

7426 sequences assigned
1997 (26.9%) exact matches, in which:
1494 unique CDR3
6 unique J



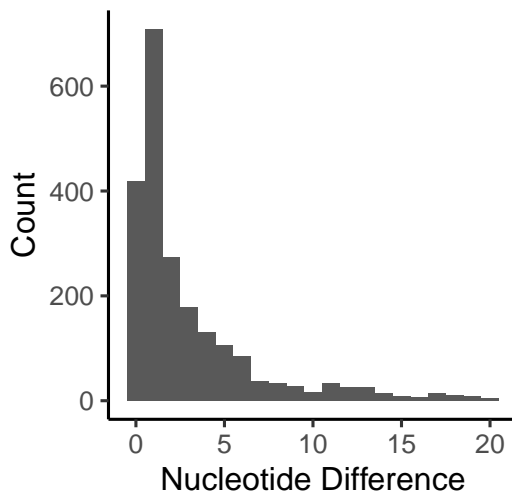
IGHV3-35*01

2 sequences assigned
No exact matches.



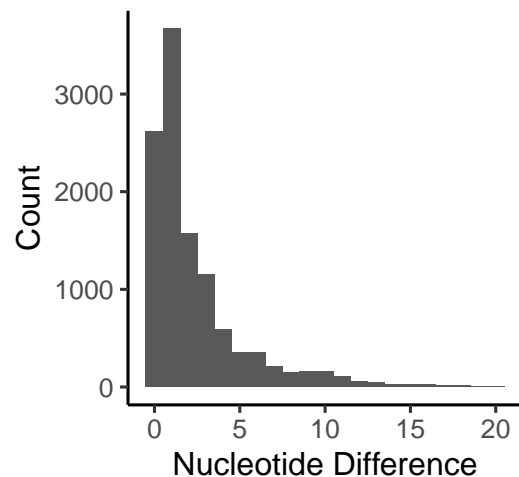
IGHV3-43*01

2232 sequences assigned
419 (18.8%) exact matches, in which:
297 unique CDR3
6 unique J



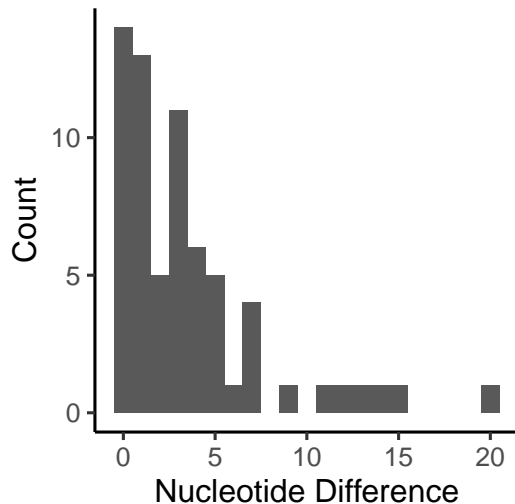
IGHV3-48*04

11353 sequences assigned
2612 (23%) exact matches, in which:
1890 unique CDR3
6 unique J



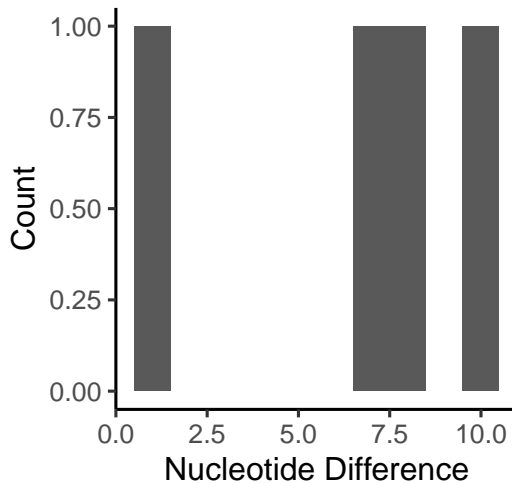
IGHV3-38-3*01

66 sequences assigned
14 (21.2%) exact matches, in which:
13 unique CDR3
5 unique J



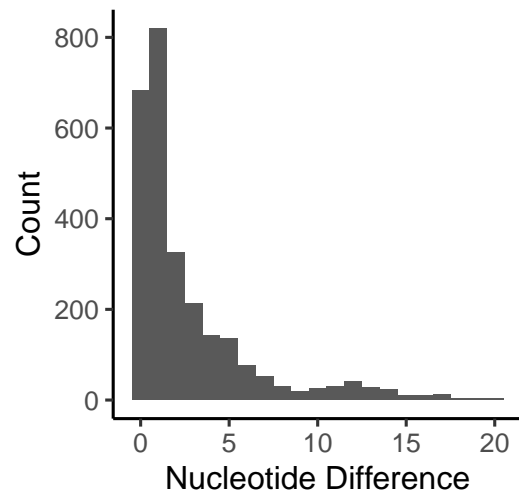
IGHV3-47*02

4 sequences assigned
No exact matches.



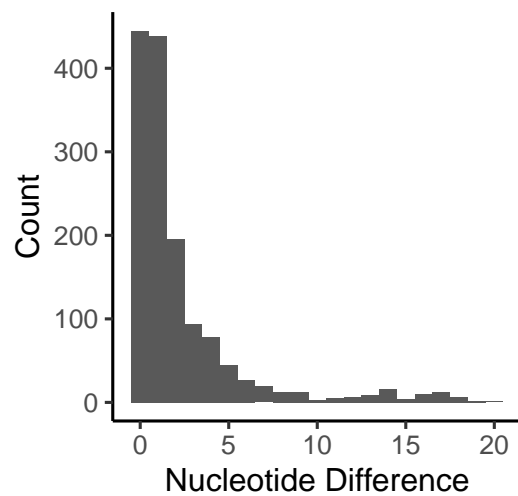
IGHV3-49*03

2700 sequences assigned
682 (25.3%) exact matches, in which:
488 unique CDR3
6 unique J



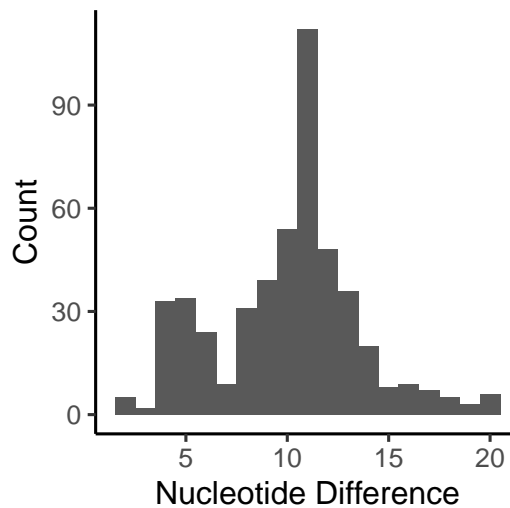
IGHV3-49*05

1459 sequences assigned
445 (30.5%) exact matches, in which:
335 unique CDR3
4 unique J



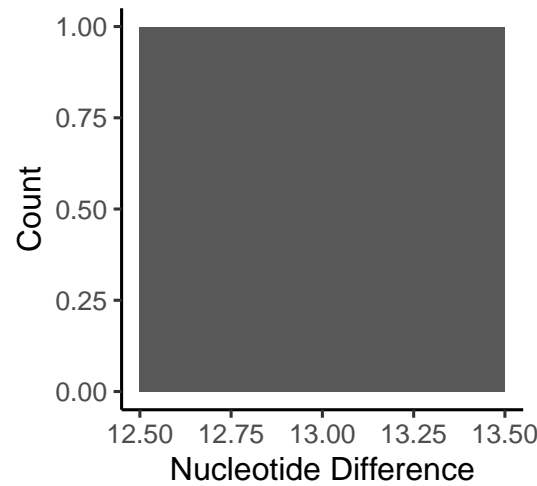
IGHV3-66*01

524 sequences assigned
No exact matches.



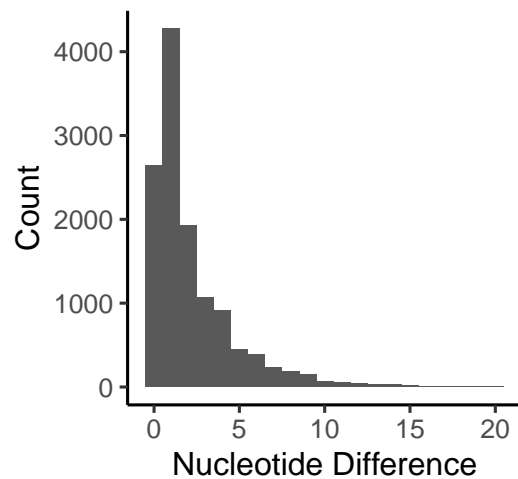
IGHV3-71*01

1 sequences assigned
No exact matches.



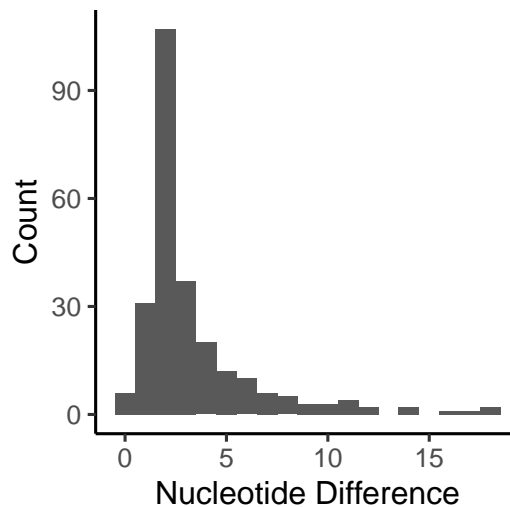
IGHV3-53*01

12584 sequences assigned
2641 (21%) exact matches, in which:
1842 unique CDR3
6 unique J



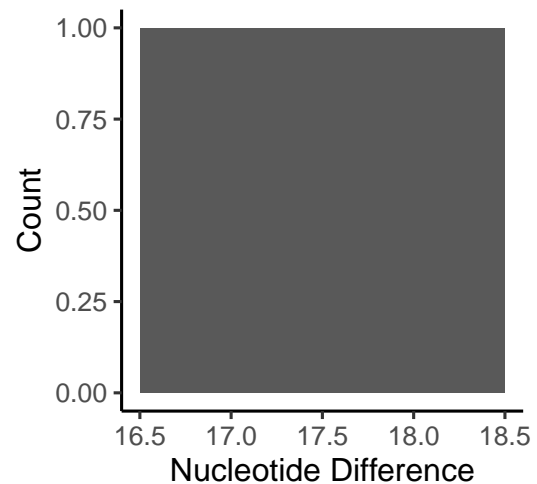
IGHV3-66*03

253 sequences assigned
6 (2.4%) exact matches, in which:
6 unique CDR3
2 unique J



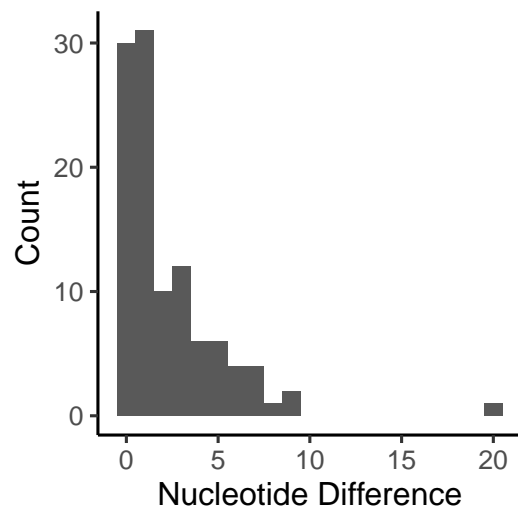
IGHV3-71*04

3 sequences assigned
No exact matches.



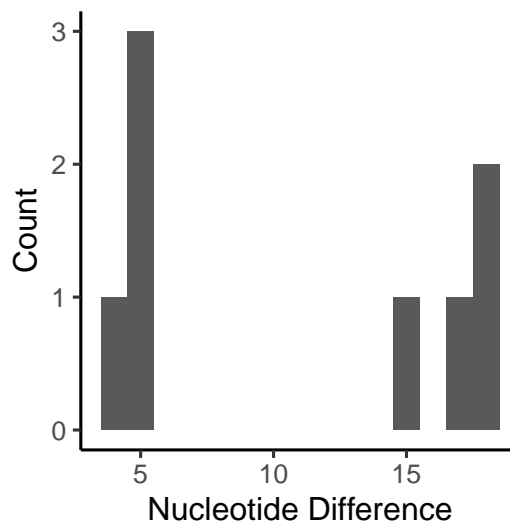
IGHV3-64*02

107 sequences assigned
30 (28%) exact matches, in which:
22 unique CDR3
4 unique J



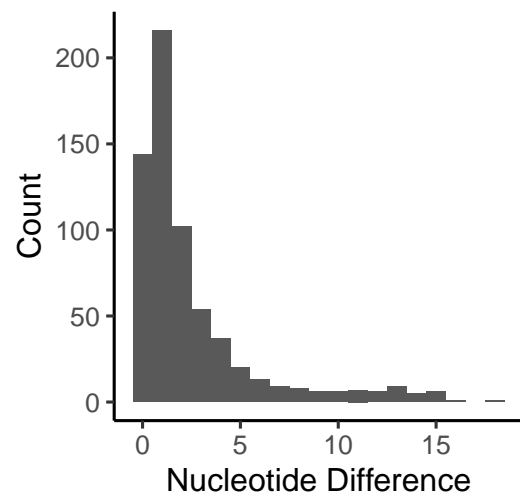
IGHV3-69-1*01

8 sequences assigned
No exact matches.



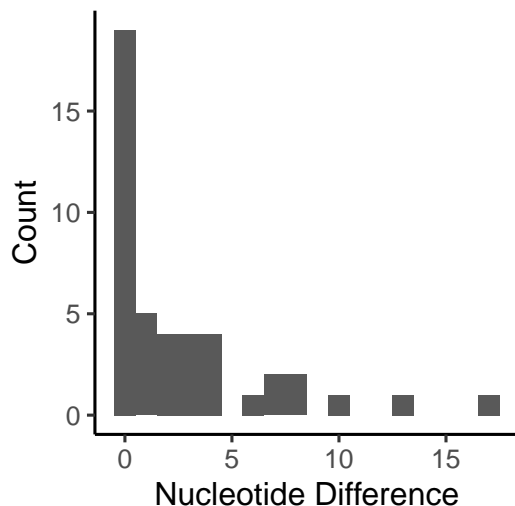
IGHV3-72*01

655 sequences assigned
144 (22%) exact matches, in which:
90 unique CDR3
5 unique J



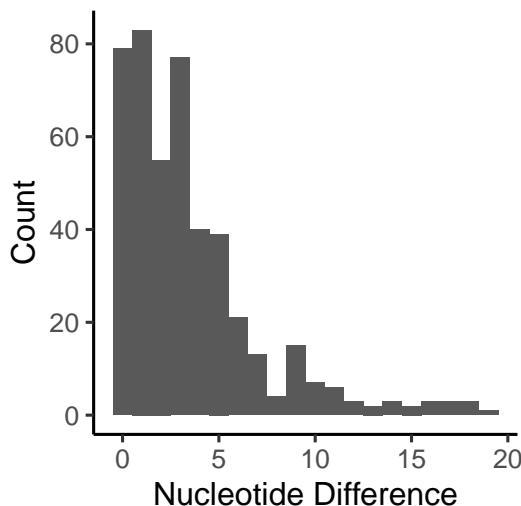
IGHV3-72*01_T315G

44 sequences assigned
19 (43.2%) exact matches, in which:
19 unique CDR3
5 unique J



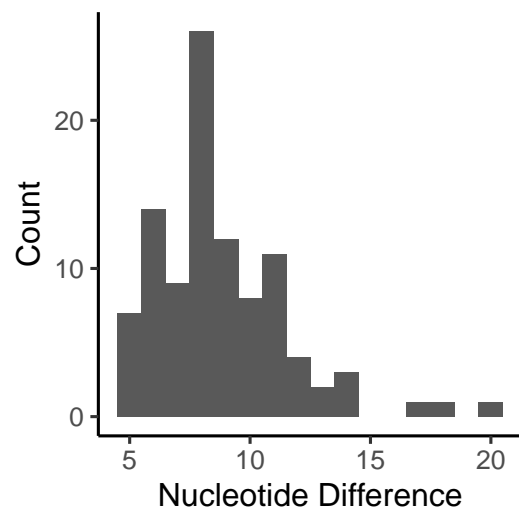
IGHV3-74*01_A315G

464 sequences assigned
79 (17%) exact matches, in which:
77 unique CDR3
6 unique J



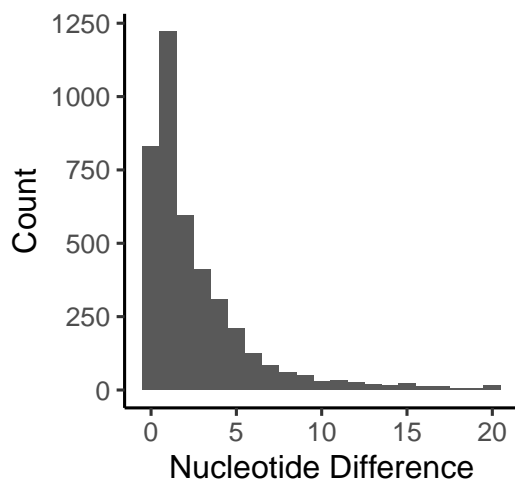
IGHV3-NL1*01

100 sequences assigned
No exact matches.



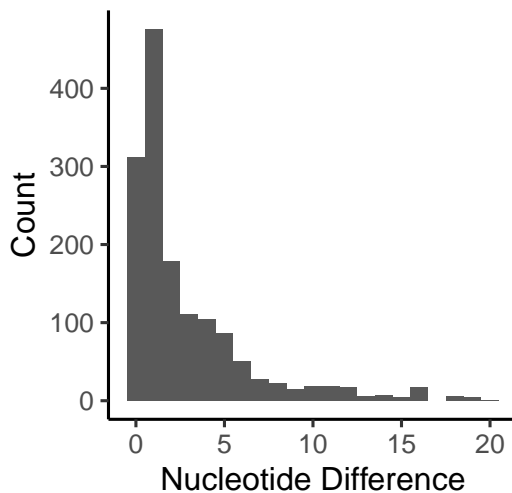
IGHV3-73*02

4125 sequences assigned
829 (20.1%) exact matches, in which:
567 unique CDR3
6 unique J



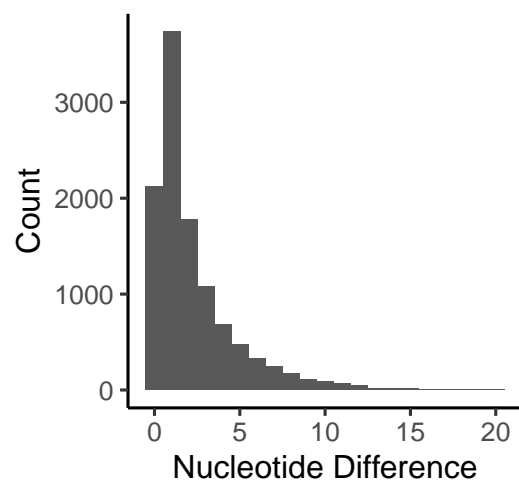
IGHV3-43D*03

1494 sequences assigned
312 (20.9%) exact matches, in which:
214 unique CDR3
6 unique J



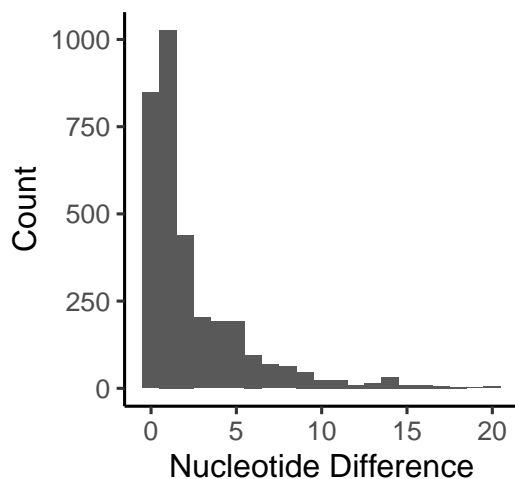
IGHV4-4*02

11082 sequences assigned
2119 (19.1%) exact matches, in which:
1551 unique CDR3
6 unique J



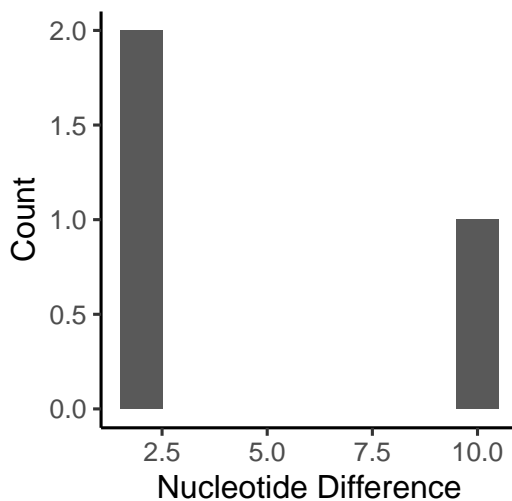
IGHV3-74*01

3335 sequences assigned
848 (25.4%) exact matches, in which:
616 unique CDR3
6 unique J



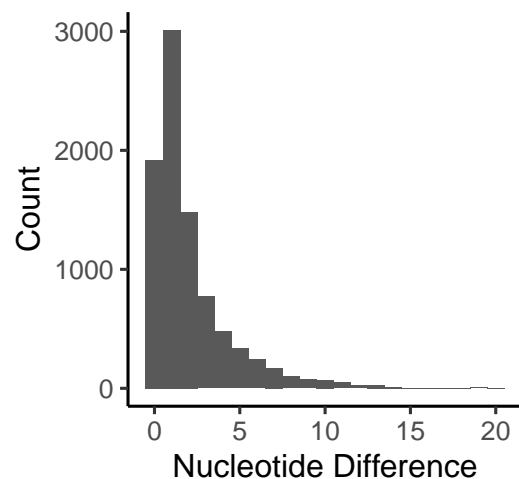
IGHV3-64D*06

3 sequences assigned
No exact matches.



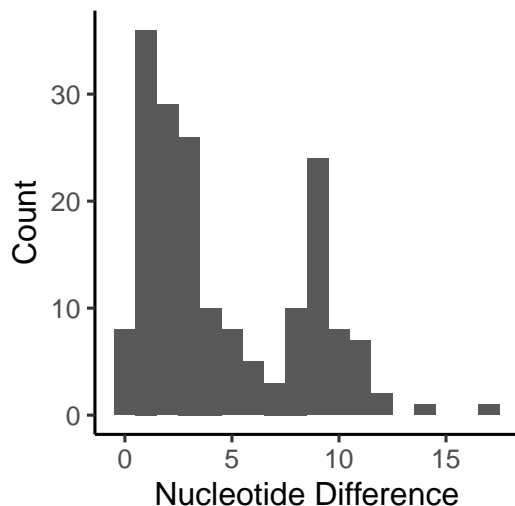
IGHV4-4*07

8820 sequences assigned
1921 (21.8%) exact matches, in which:
1426 unique CDR3
6 unique J



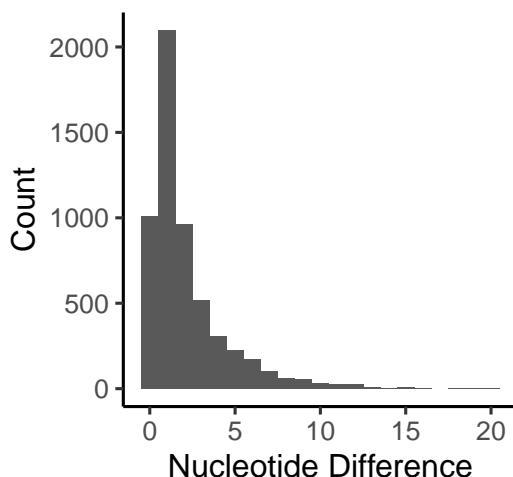
IGHV4-28*02

179 sequences assigned
8 (4.5%) exact matches, in which:
6 unique CDR3
3 unique J



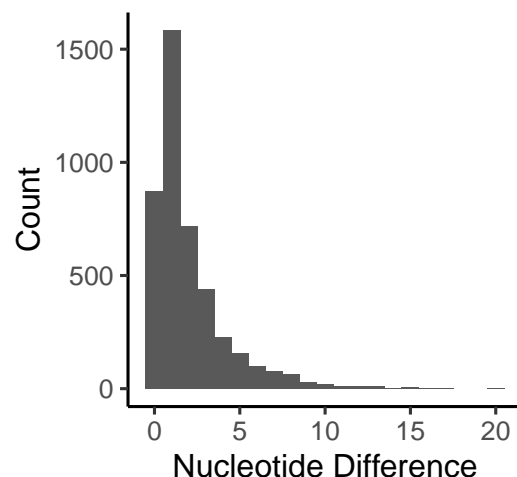
IGHV4-30-2*01

5649 sequences assigned
1009 (17.9%) exact matches, in which:
678 unique CDR3
6 unique J



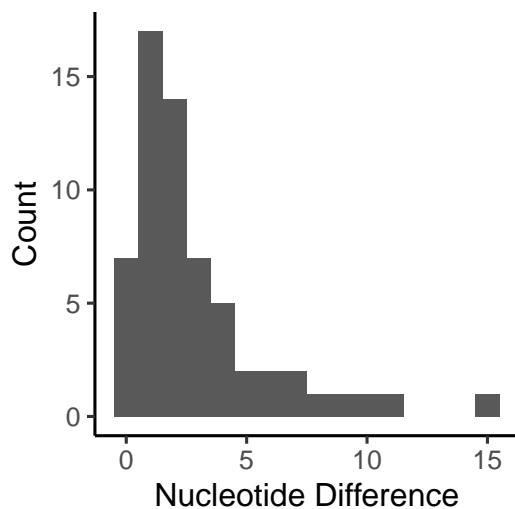
IGHV4-31*01

4367 sequences assigned
873 (20%) exact matches, in which:
638 unique CDR3
6 unique J



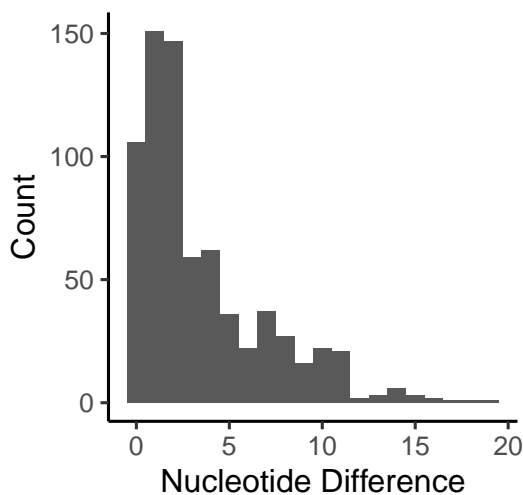
IGHV4-28*03

61 sequences assigned
7 (11.5%) exact matches, in which:
4 unique CDR3
2 unique J



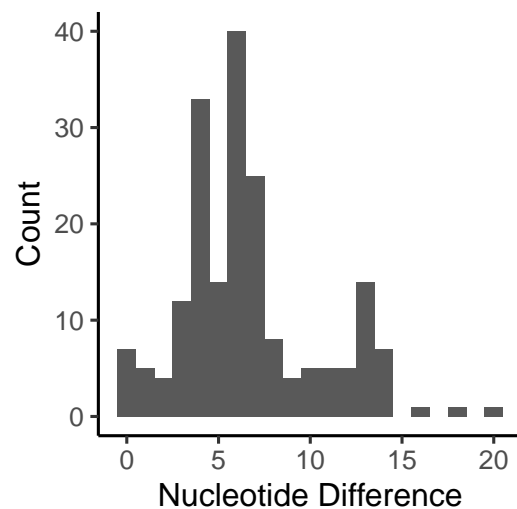
IGHV4-30-2*01_C315G

739 sequences assigned
106 (14.3%) exact matches, in which:
106 unique CDR3
6 unique J



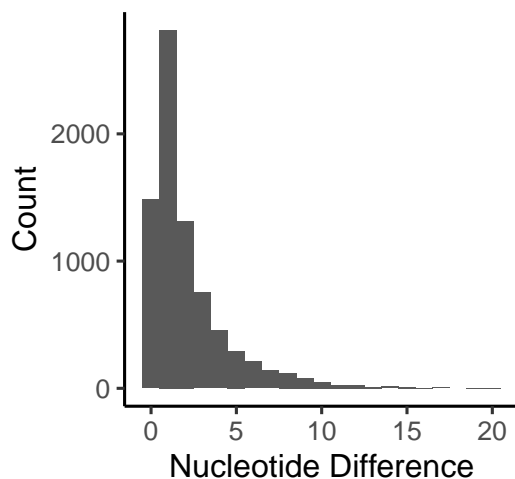
IGHV4-31*03

193 sequences assigned
7 (3.6%) exact matches, in which:
7 unique CDR3
4 unique J



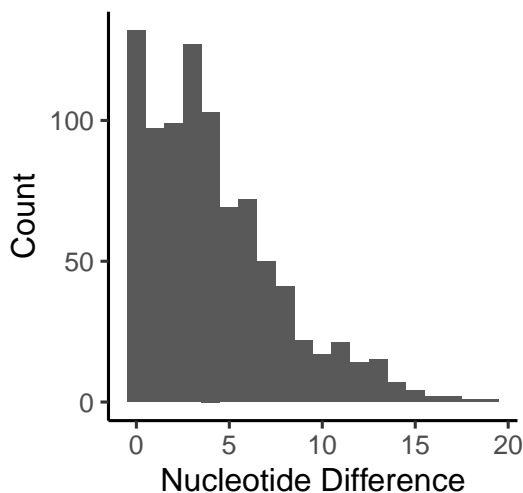
IGHV4-30-4*01

7880 sequences assigned
1483 (18.8%) exact matches, in which:
988 unique CDR3
6 unique J



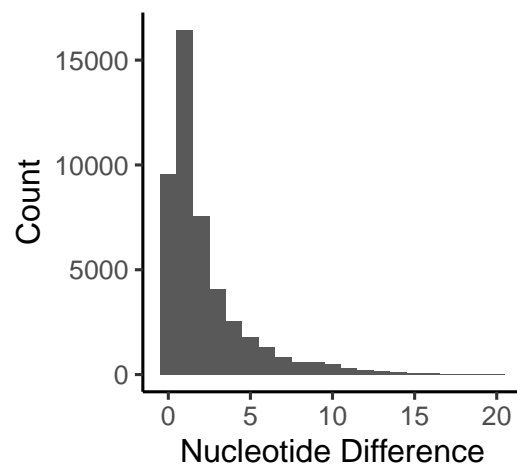
IGHV4-30-4*01_C315G

904 sequences assigned
132 (14.6%) exact matches, in which:
129 unique CDR3
6 unique J



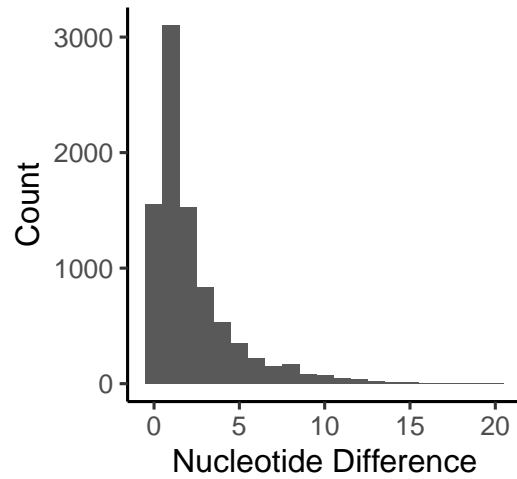
IGHV4-34*01

47078 sequences assigned
9586 (20.4%) exact matches, in which:
6763 unique CDR3
6 unique J



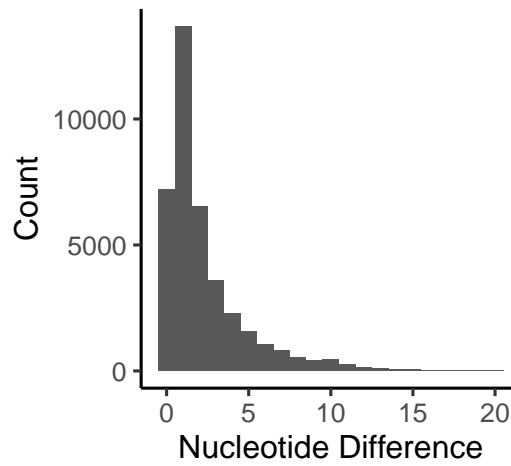
IGHV4-38-2*02

8835 sequences assigned
1553 (17.6%) exact matches, in which:
1107 unique CDR3
6 unique J



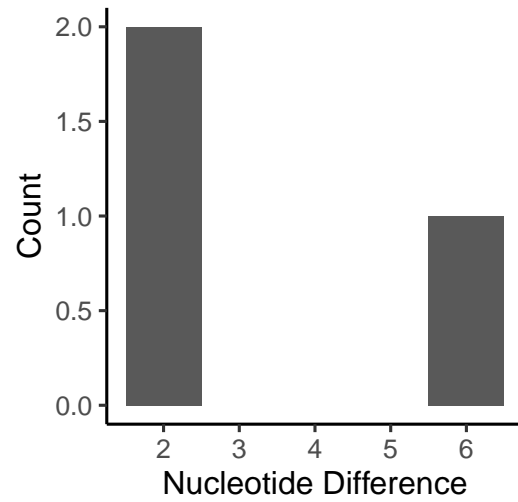
IGHV4-59*01

38967 sequences assigned
7207 (18.5%) exact matches, in which:
5010 unique CDR3
6 unique J



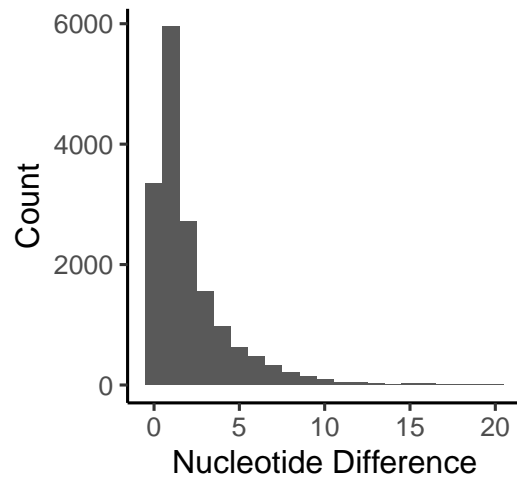
IGHV5-10-1*03

3 sequences assigned
No exact matches.



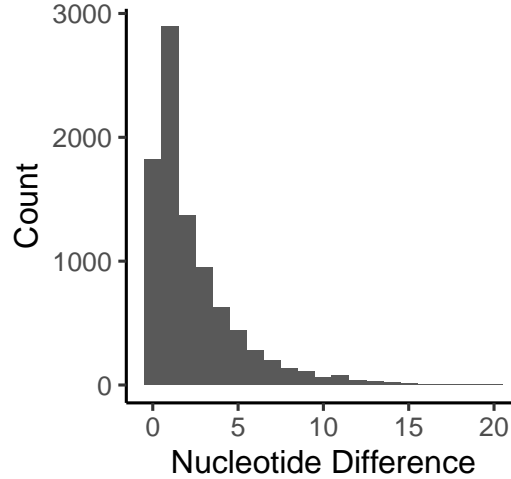
IGHV4-39*01

16696 sequences assigned
3341 (20%) exact matches, in which:
2466 unique CDR3
6 unique J



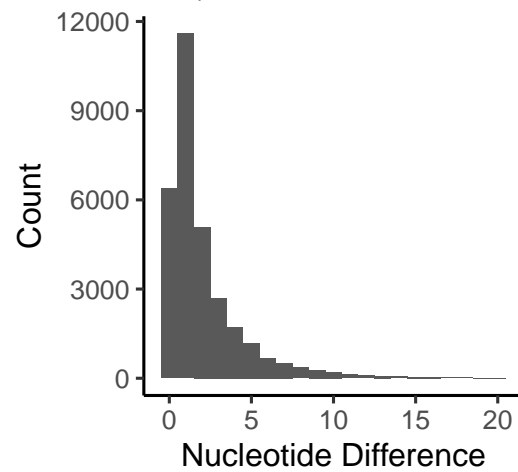
IGHV4-61*01

9094 sequences assigned
1822 (20%) exact matches, in which:
1357 unique CDR3
6 unique J



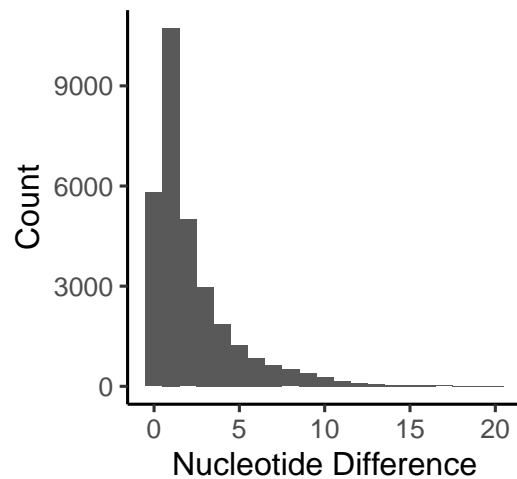
IGHV5-51*01

31395 sequences assigned
6381 (20.3%) exact matches, in which:
4367 unique CDR3
6 unique J



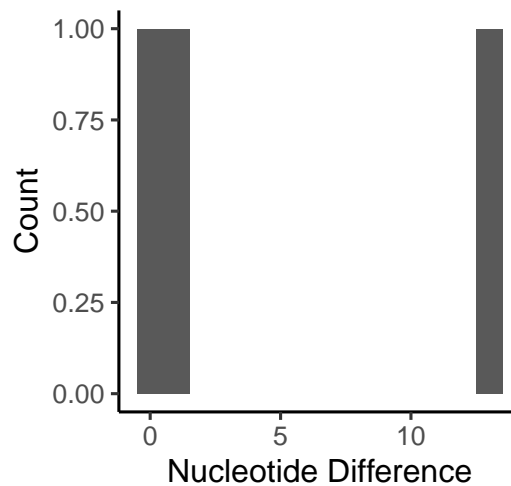
IGHV4-39*07

30905 sequences assigned
5802 (18.8%) exact matches, in which:
4198 unique CDR3
6 unique J



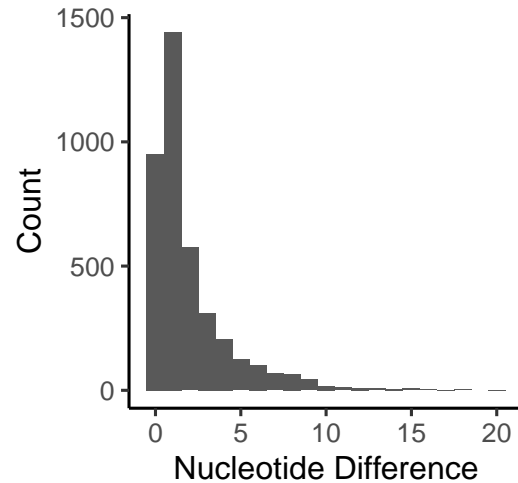
IGHV5-10-1*01

3 sequences assigned
1 (33.3%) exact matches, in which:
1 unique CDR3
1 unique J



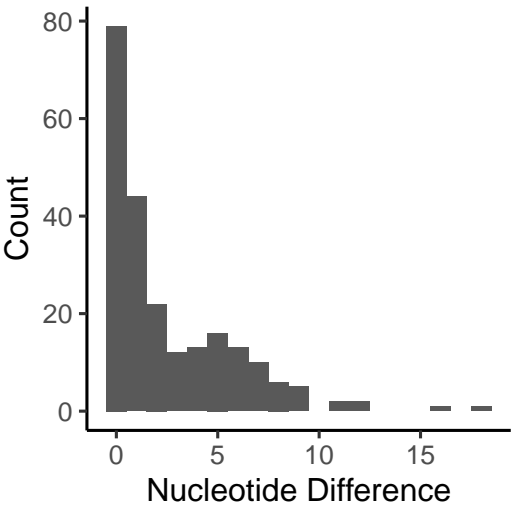
IGHV6-1*01

3966 sequences assigned
950 (24%) exact matches, in which:
606 unique CDR3
5 unique J



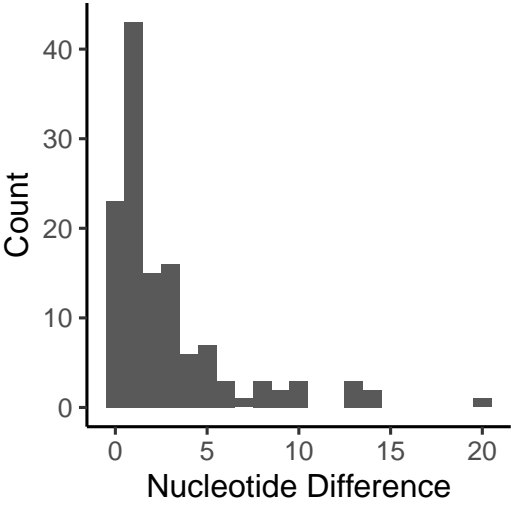
IGHV6-1*01_A315G

229 sequences assigned
79 (34.5%) exact matches, in which:
79 unique CDR3
6 unique J

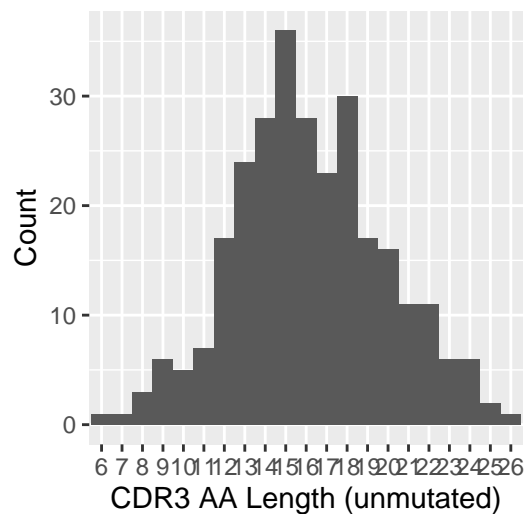


IGHV7-4-1*01

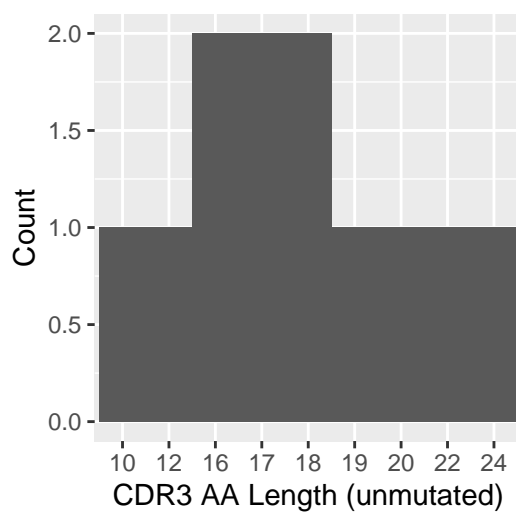
128 sequences assigned
23 (18%) exact matches, in which:
20 unique CDR3
4 unique J



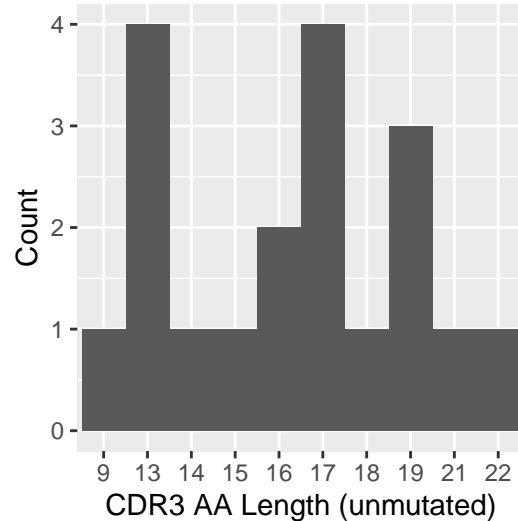
IGHV1-24*01_A315G_C317



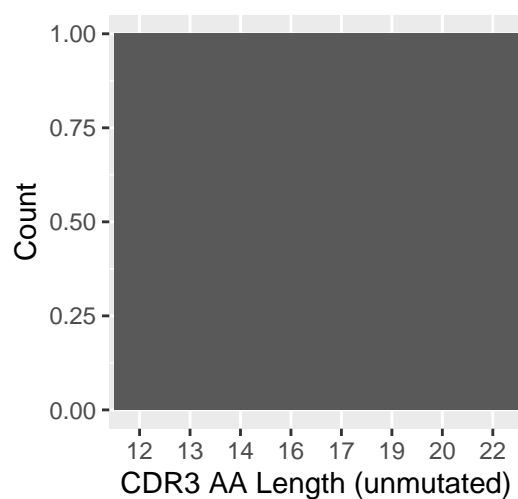
IGHV3-20*04_C300T_T301



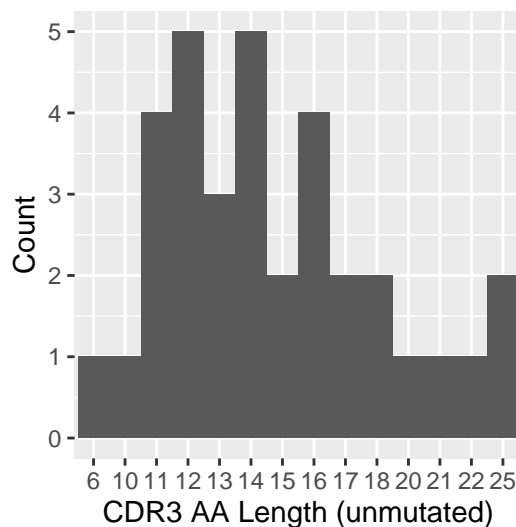
IGHV3-72*01_T315G



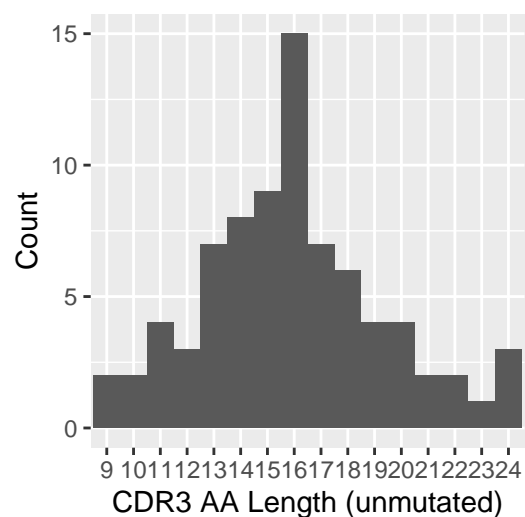
IGHV1-45*02_A315G



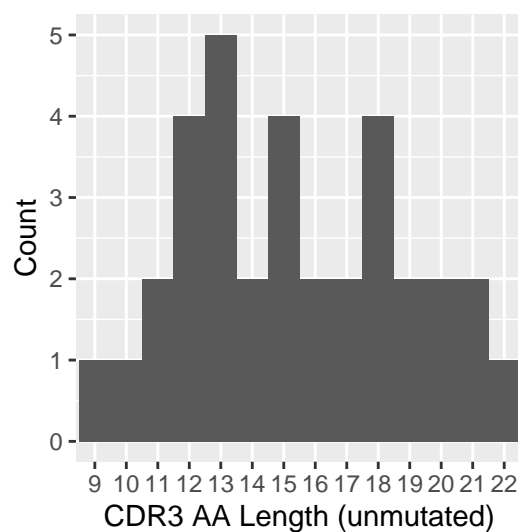
IGHV3-30*03_T288C_T300C



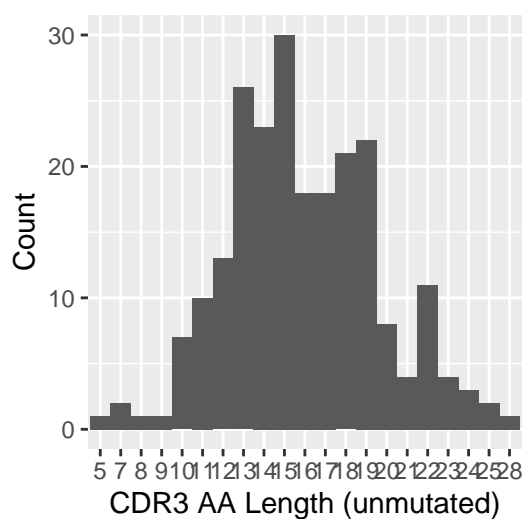
IGHV3-74*01_A315G



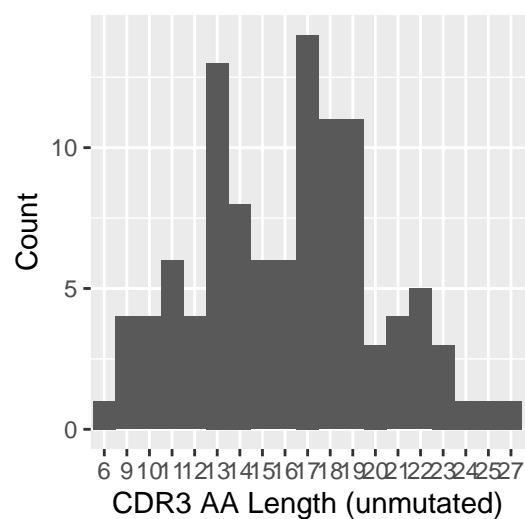
IGHV3-13*01_A315G



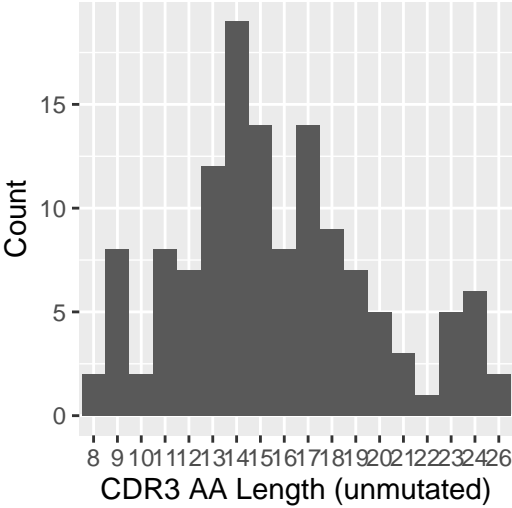
IGHV3-30-3*02_G75C



IGHV4-30-2*01_C315G



IGHV4-30-4*01_C315G



IGHV6-1*01_A315G

