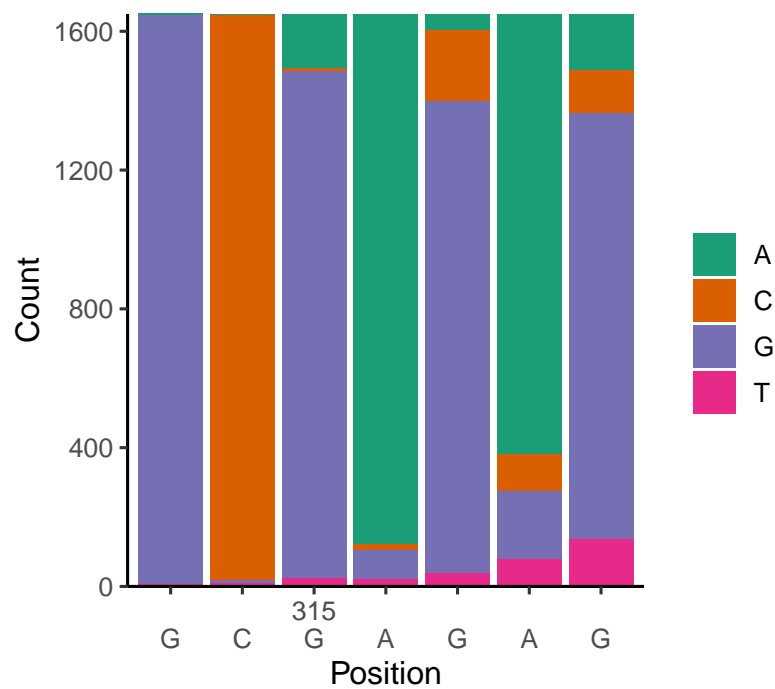
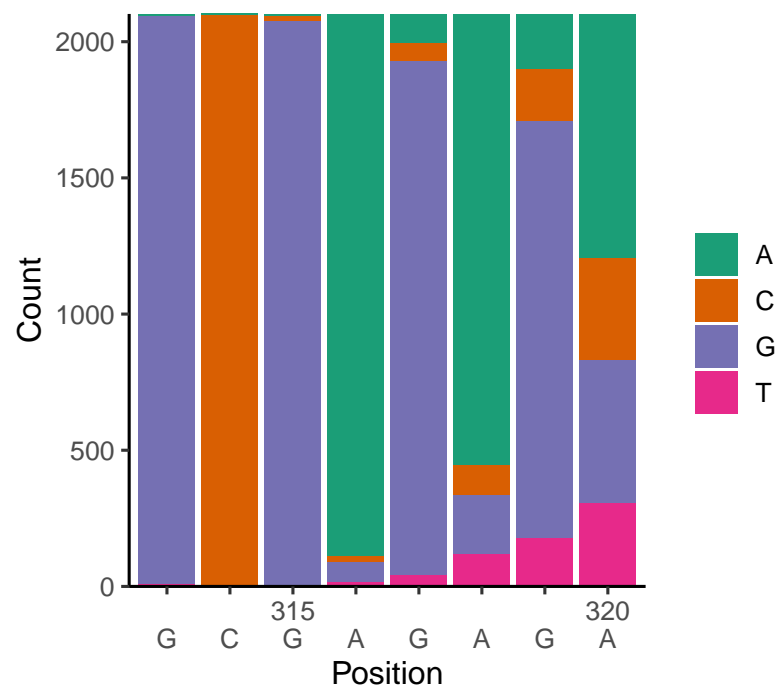


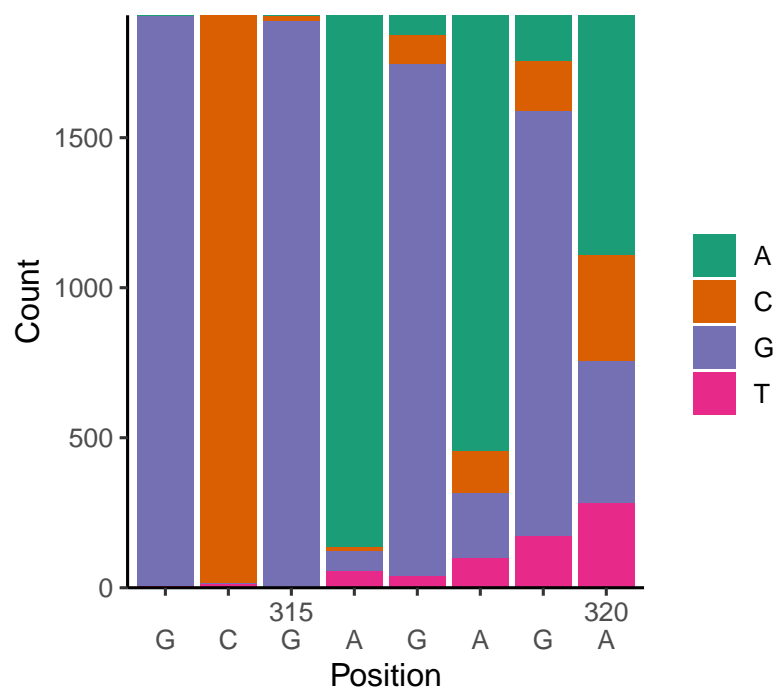
Gene IGHV1-3\*04\_A291G\_T300C



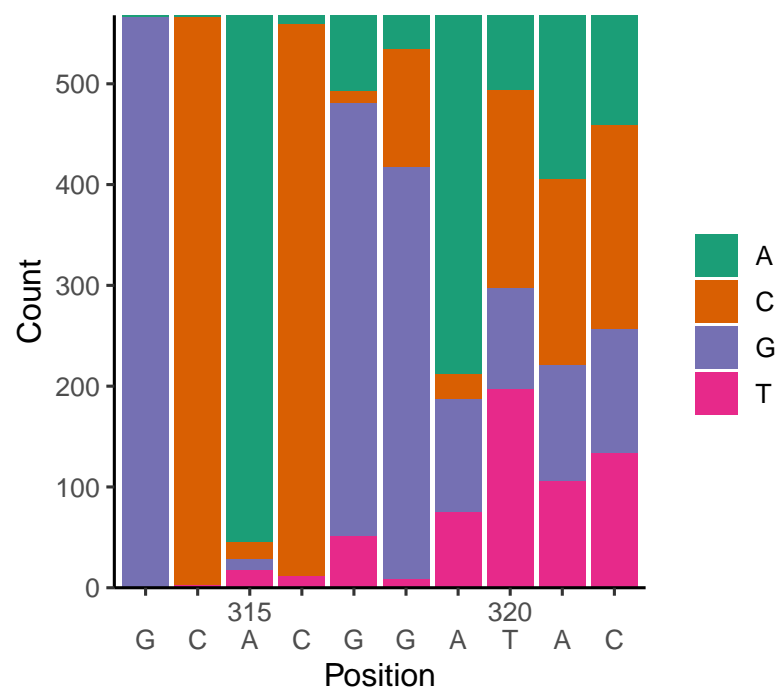
Gene IGHV1-69-2\*01\_A315G\_C317G



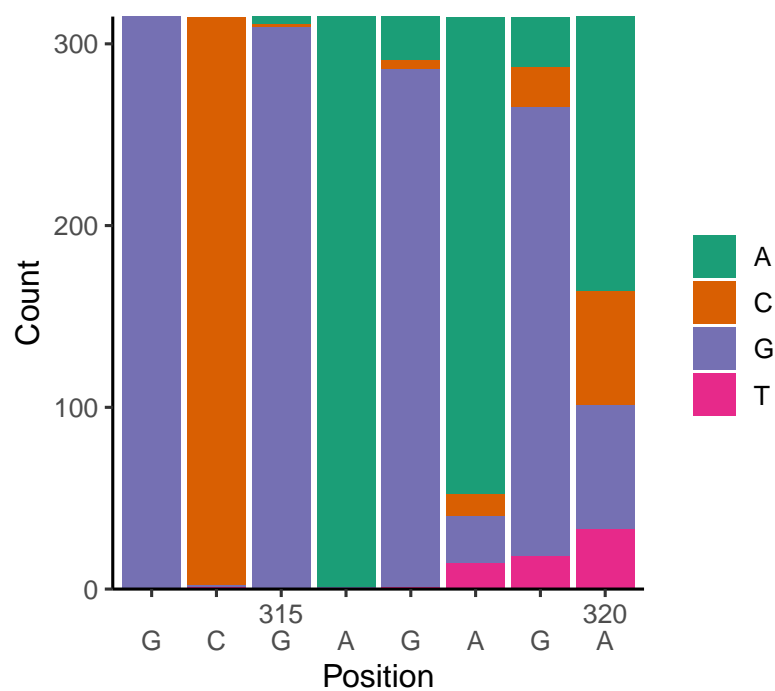
Gene IGHV1-24\*01\_A315G\_C317G



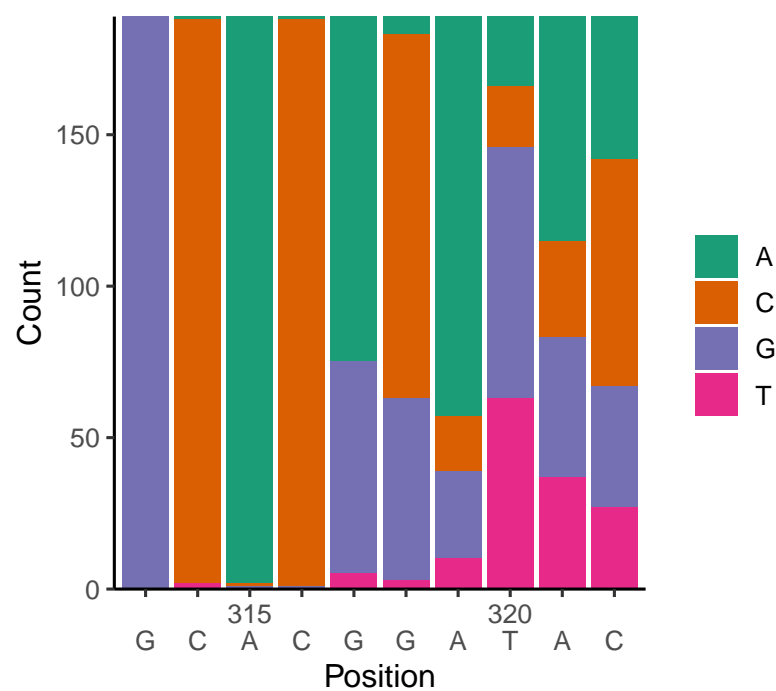
Gene IGHV2-70\*04\_C6T



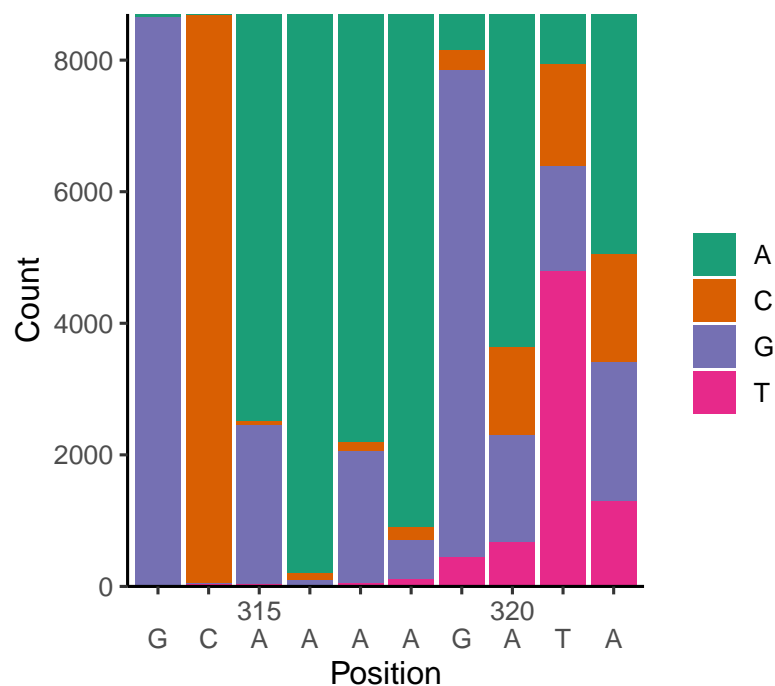
Gene IGHV1-58\*02\_G316A\_C317G



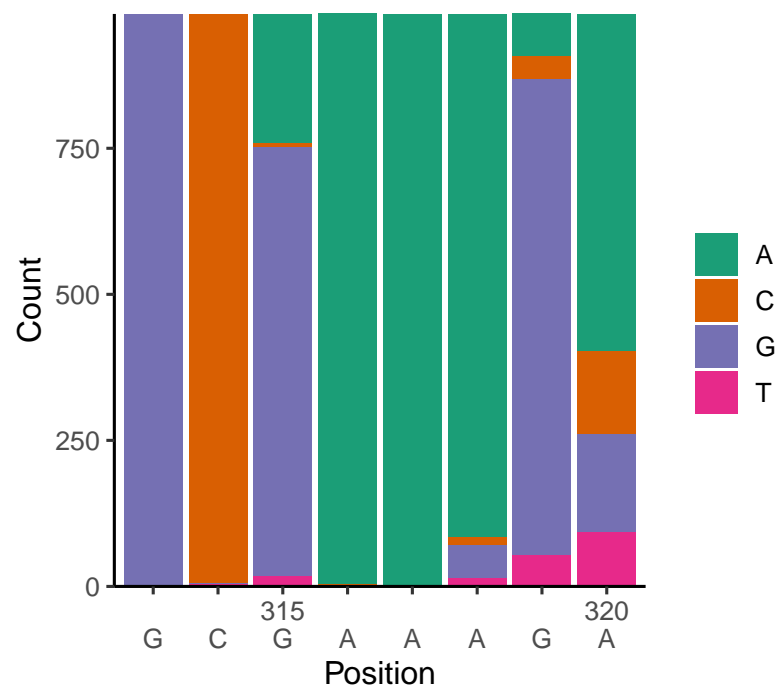
Gene IGHV2-70\*15\_G303A



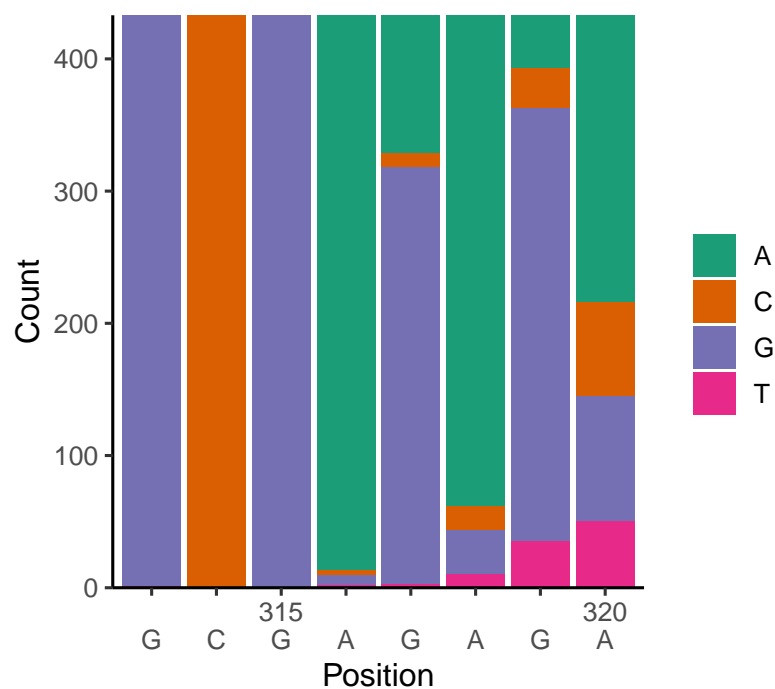
Gene IGHV3-9\*01\_T194C\_C198T



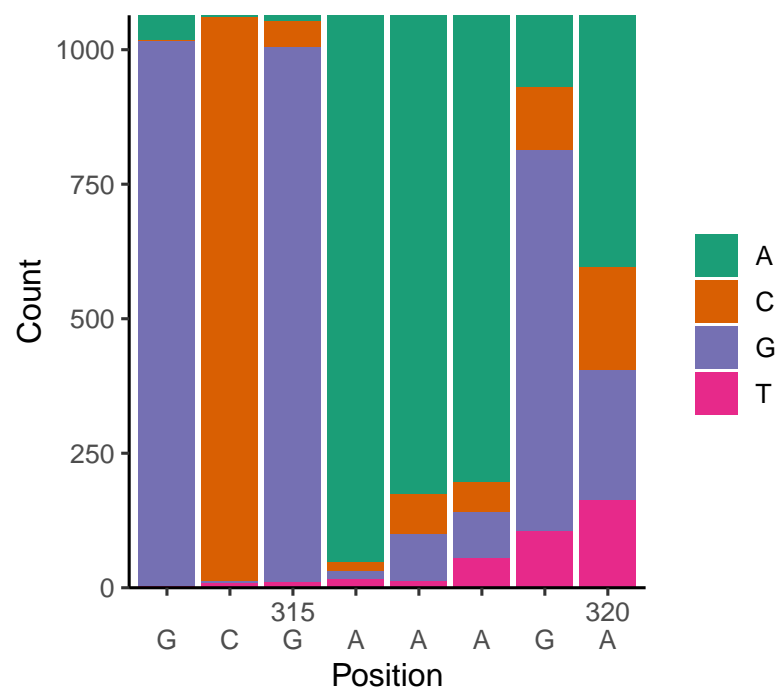
Gene IGHV3-30-3\*02\_G75C



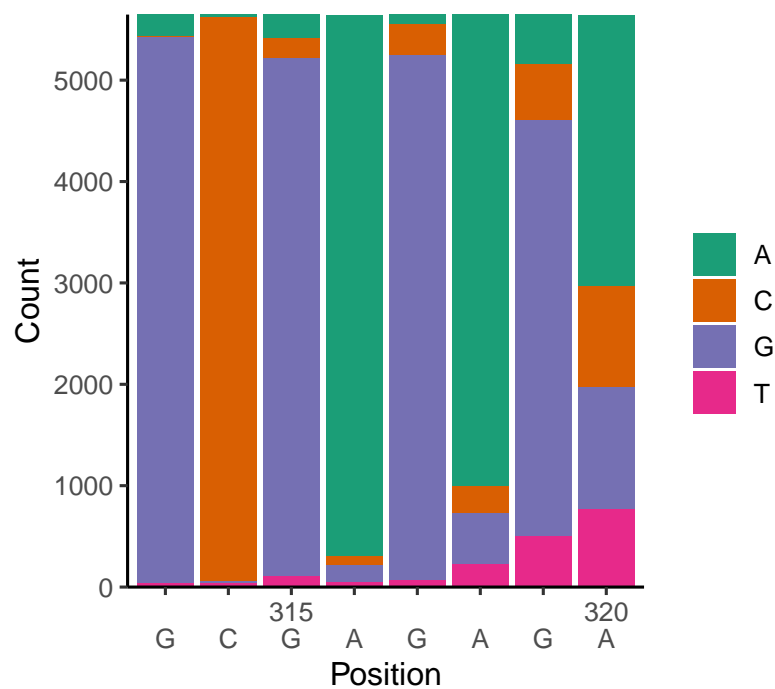
Gene IGHV3-13\*01\_A315G



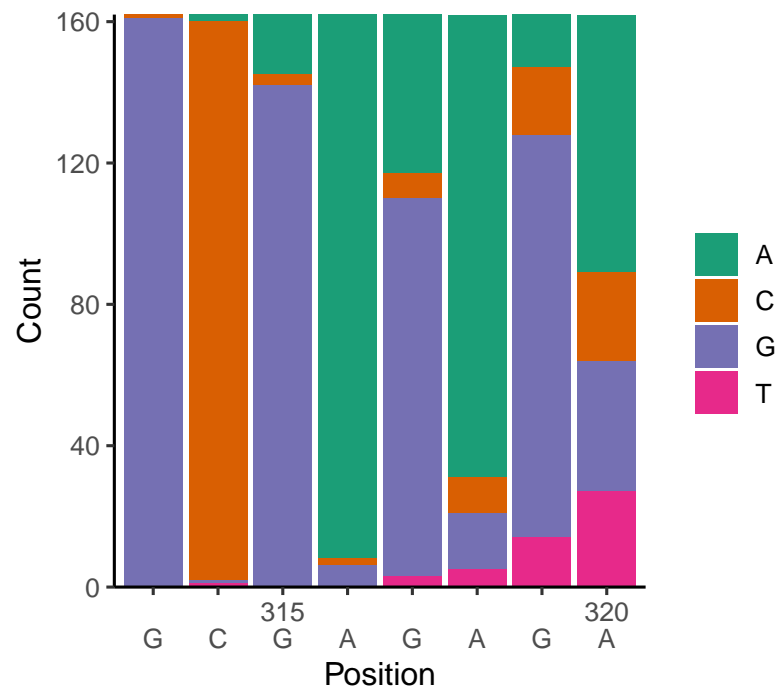
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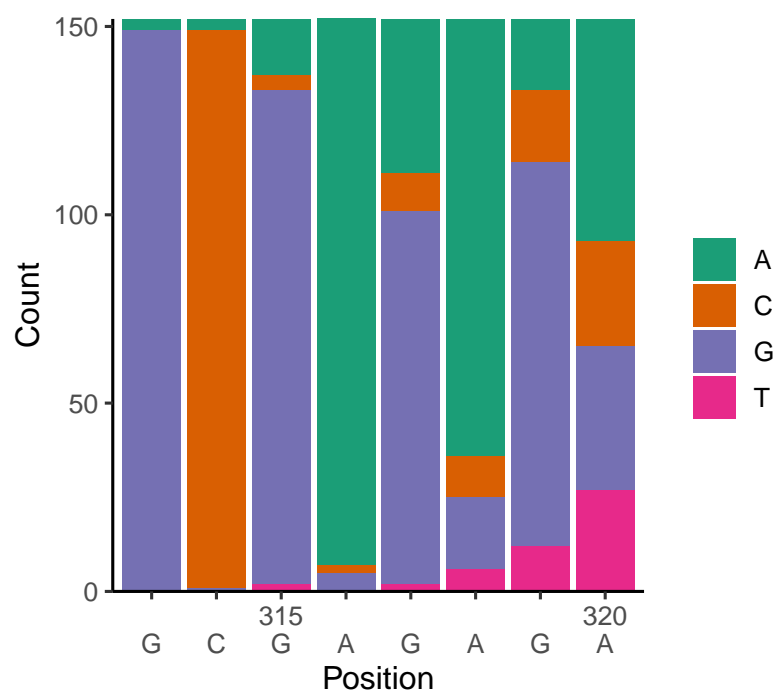
Gene IGHV3-23\*01\_A303G\_A317G



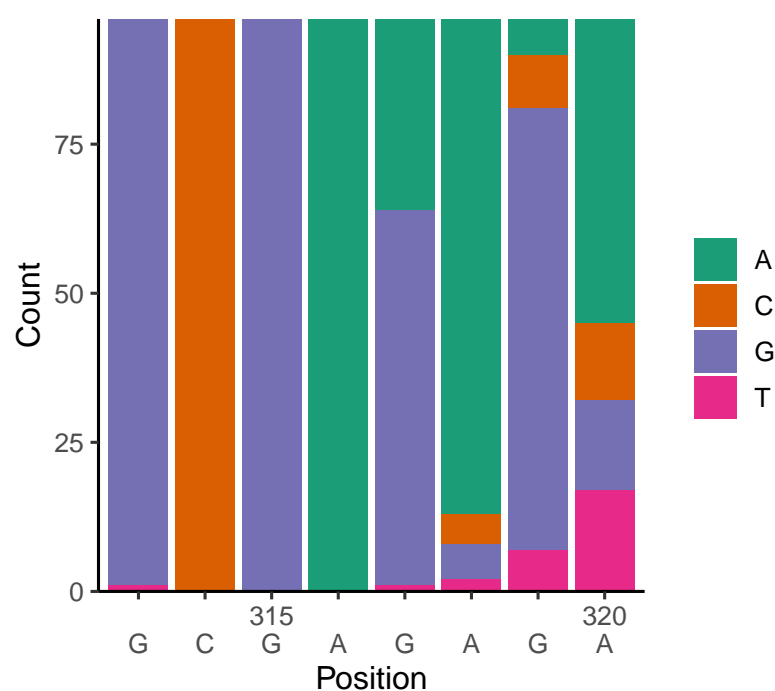
Gene IGHV3-49\*03\_A313G\_T315G



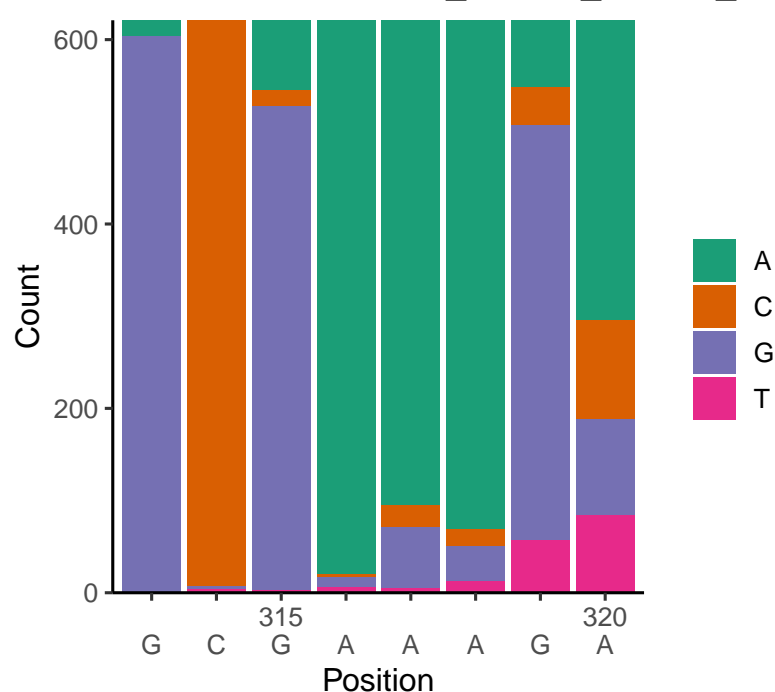
Gene IGHV3-49\*04\_A313G\_T315G



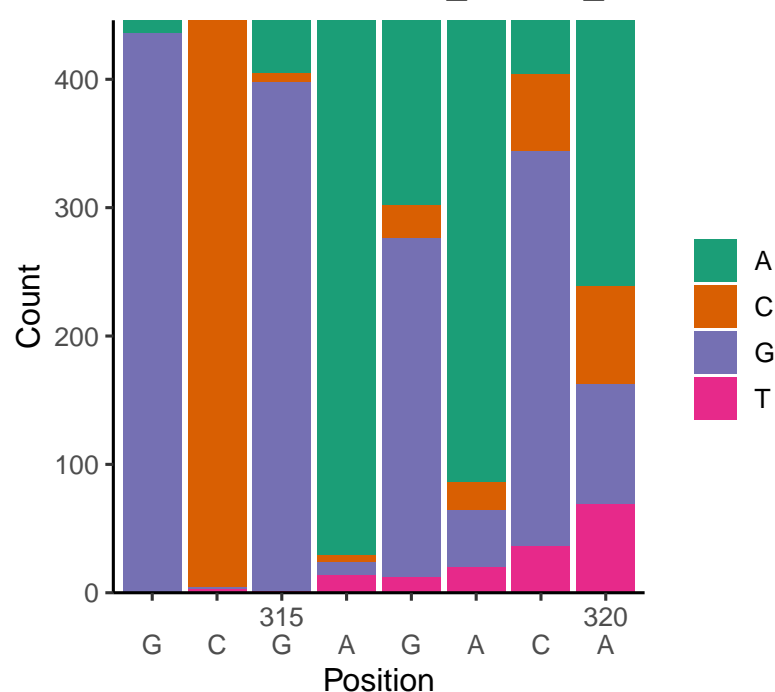
Gene IGHV3-72\*01\_T315G



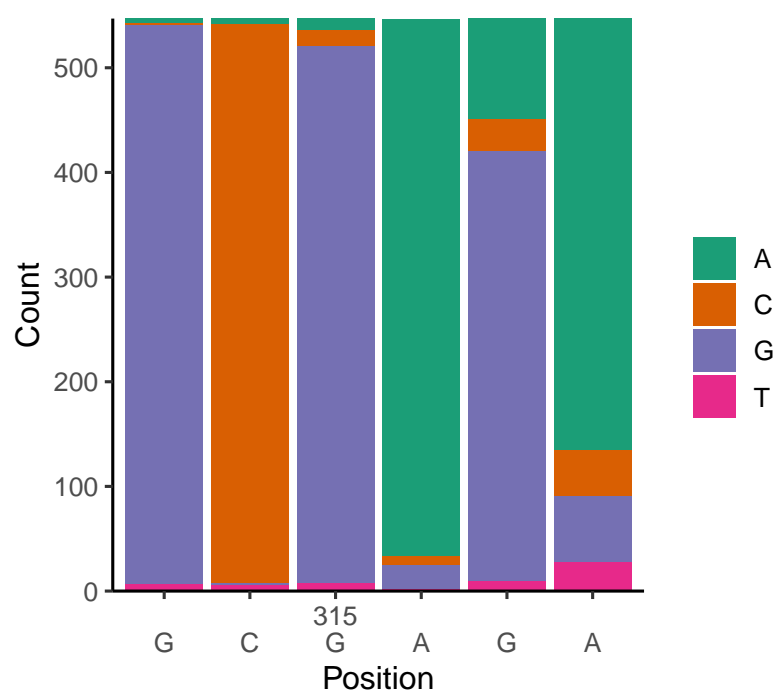
Gene IGHV3-66\*01\_A223C\_T267G\_T301



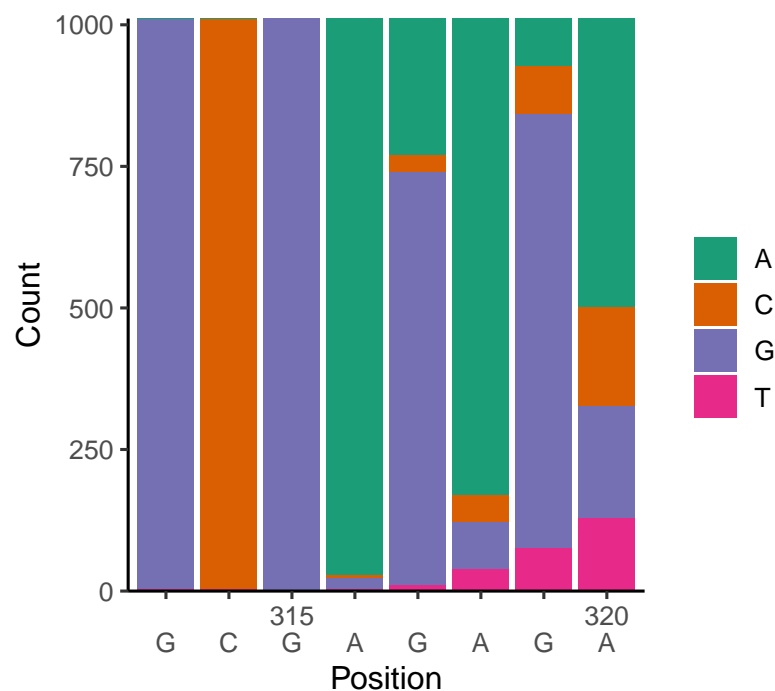
Gene IGHV3-73\*01\_A313G\_T315G



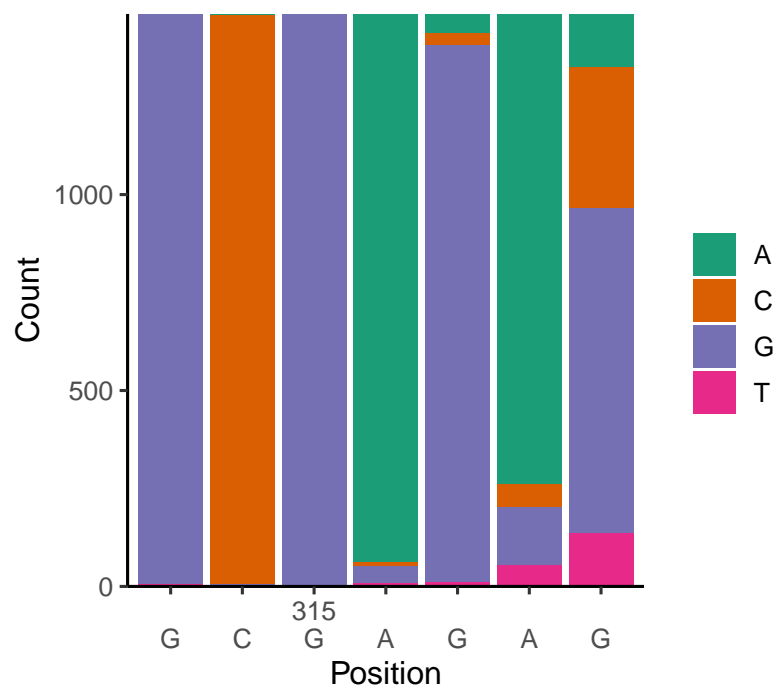
Gene IGHV3-66\*02\_T267G



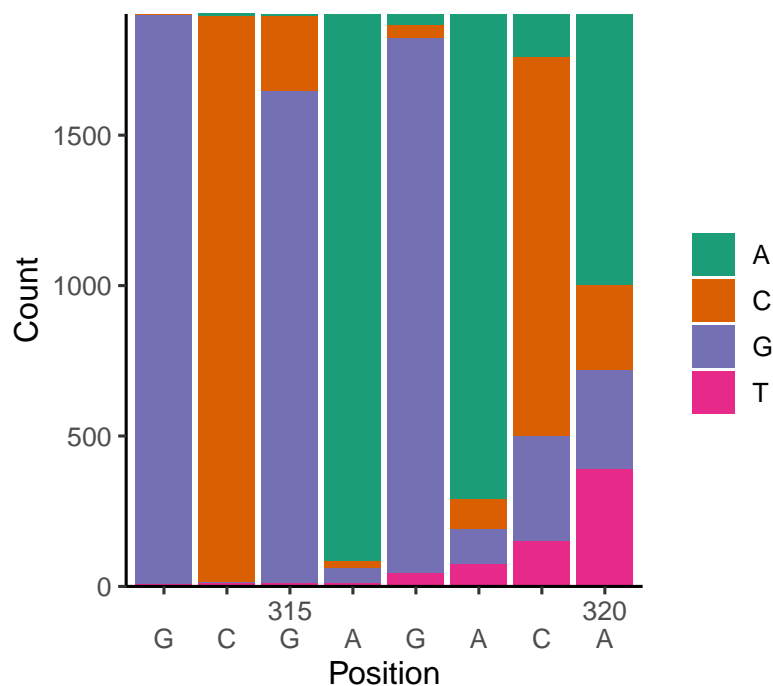
Gene IGHV3-74\*01\_A315G



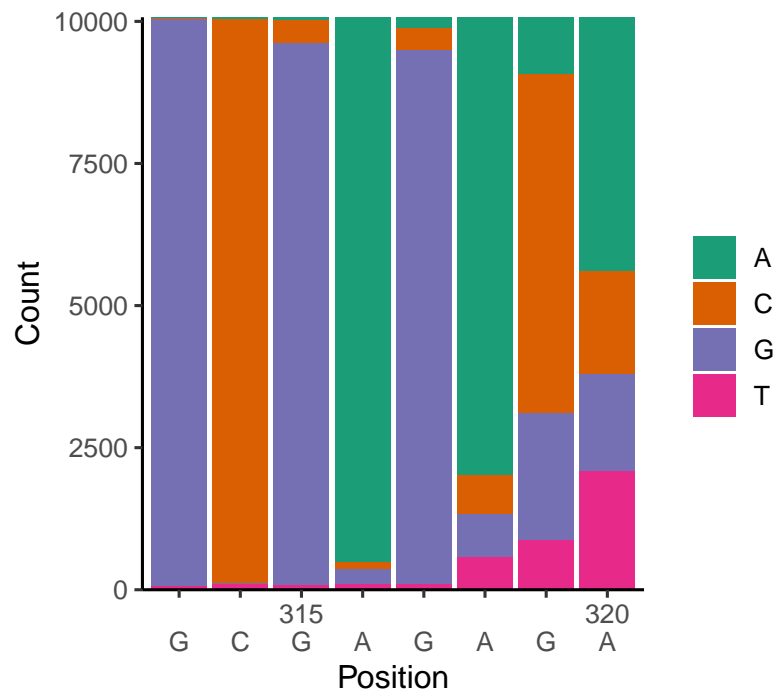
Gene IGHV4-30-4\*08\_C315G



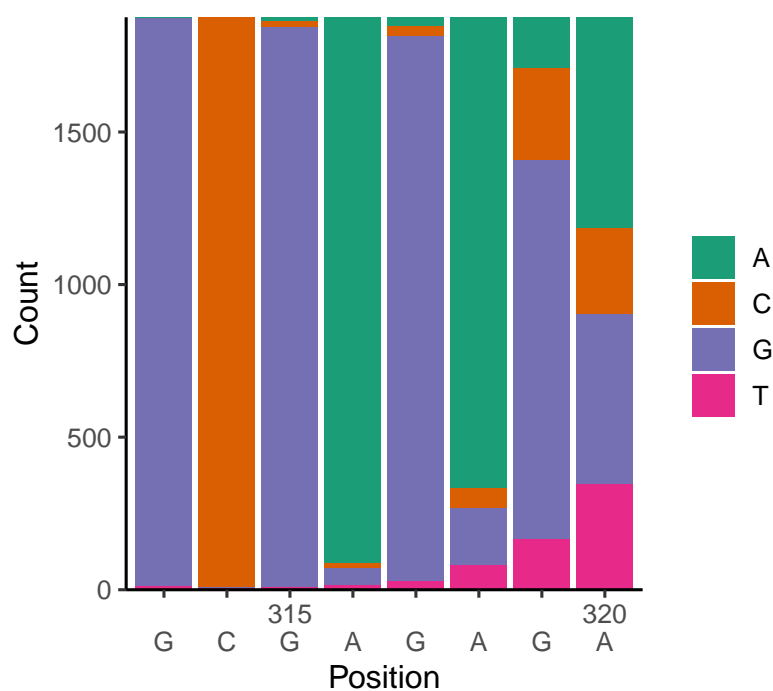
Gene IGHV4-39\*01\_C237A\_T300C



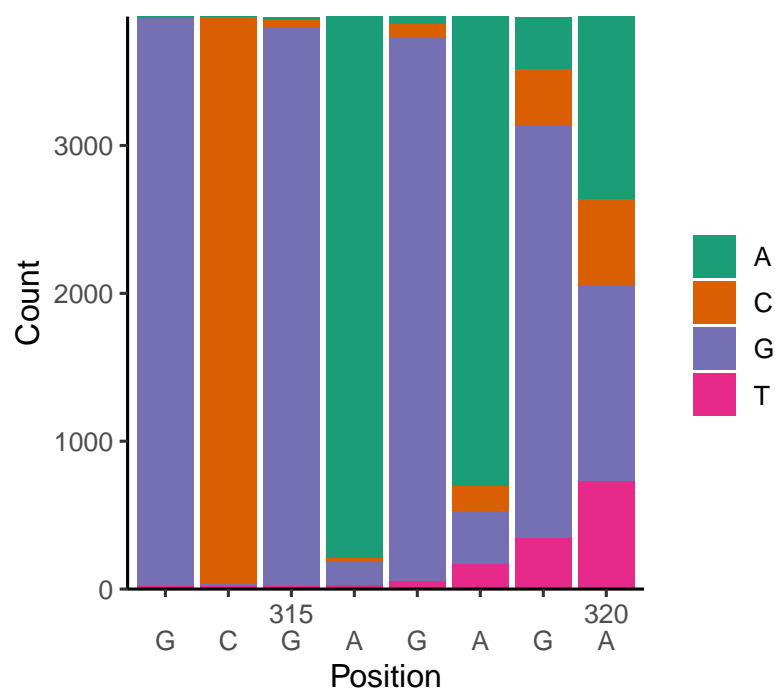
Gene IGHV4-38-2\*02\_A70G



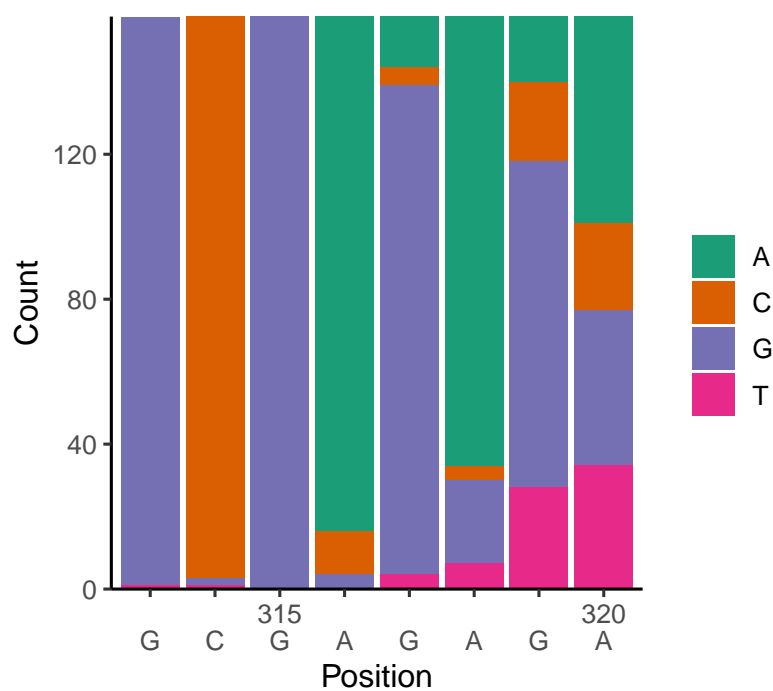
Gene IGHV4-61\*08\_G48A\_G49C\_G88A



Gene IGHV4-38-2\*02\_A70G\_A291G



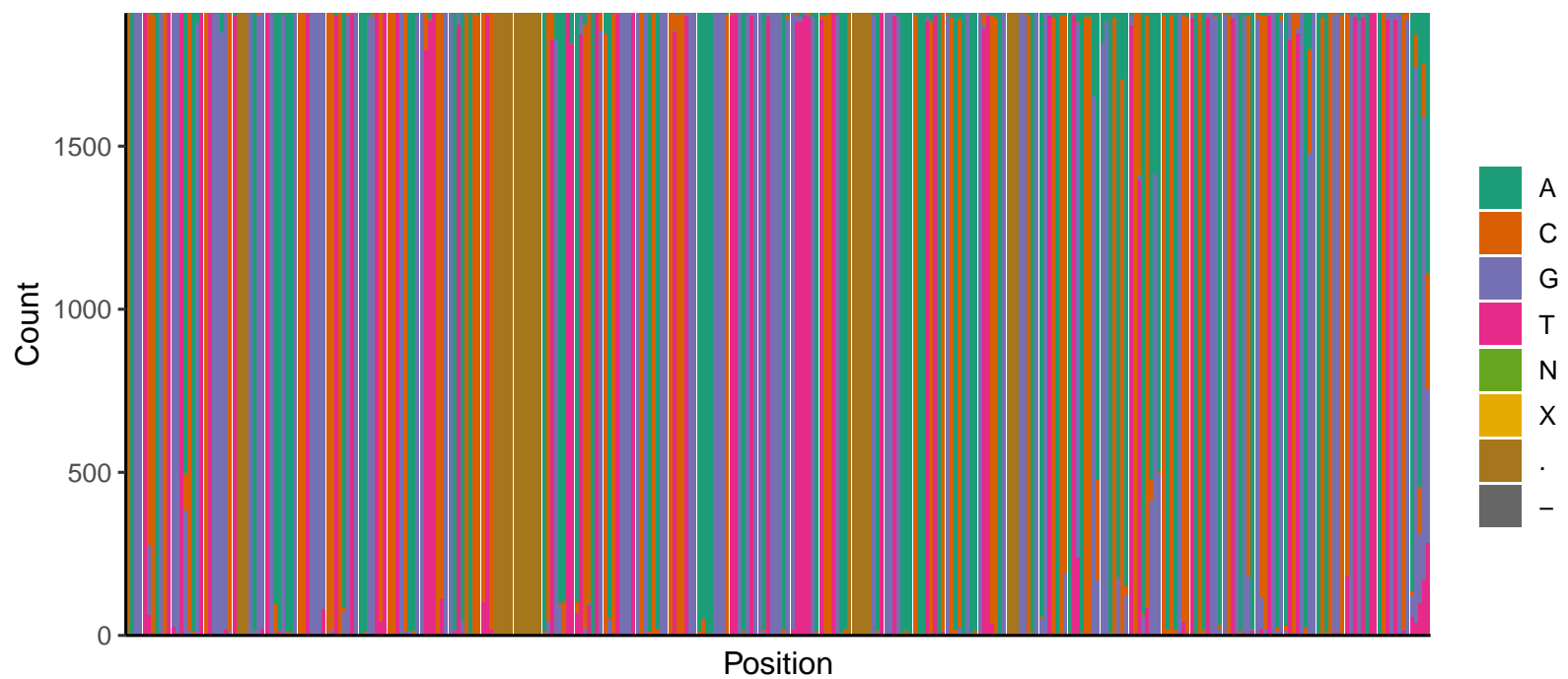
Gene IGHV6-1\*01\_A315G



Gene IGHV1-3\*04\_A291G\_T300C



Gene IGHV1-24\*01\_A315G\_C317G



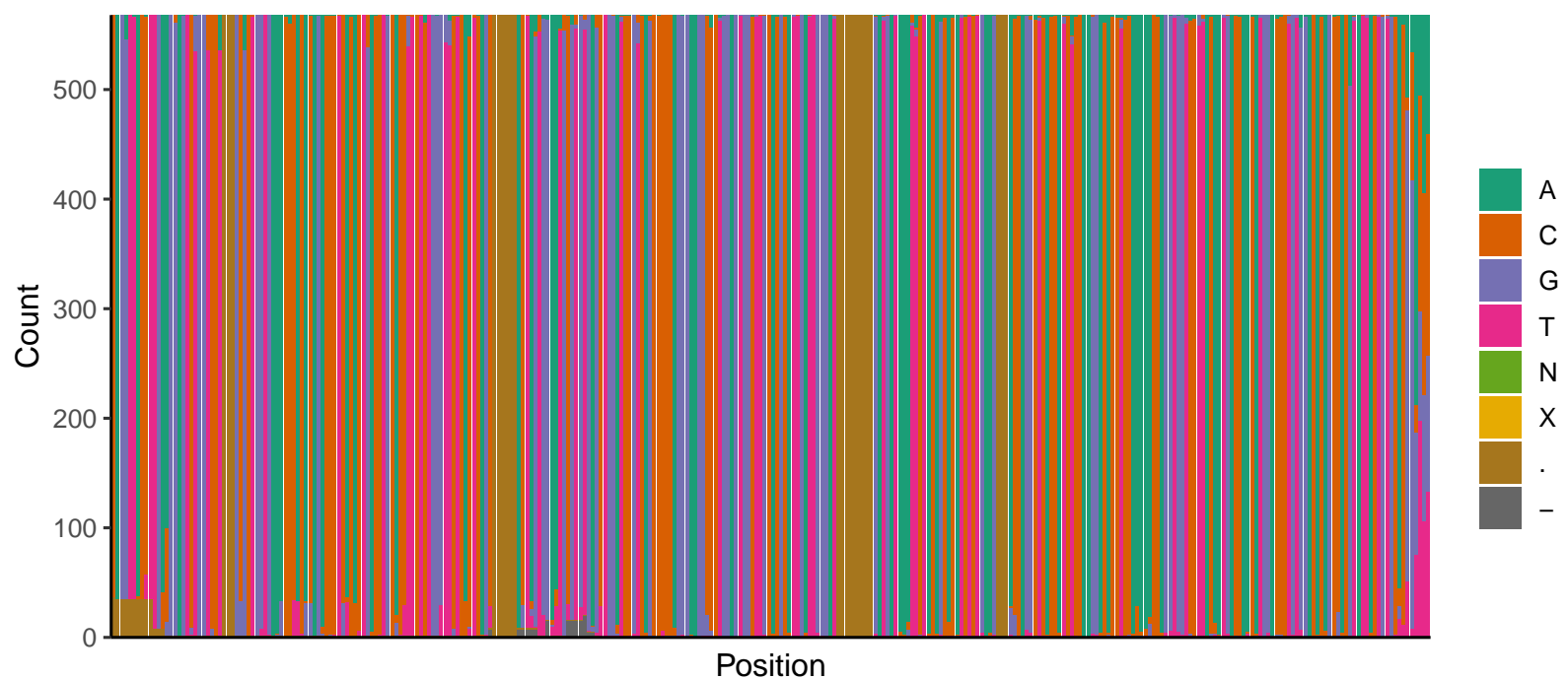
Gene IGHV1-58\*02\_G316A\_C317G



Gene IGHV1-69-2\*01\_A315G\_C317G



Gene IGHV2-70\*04\_C6T



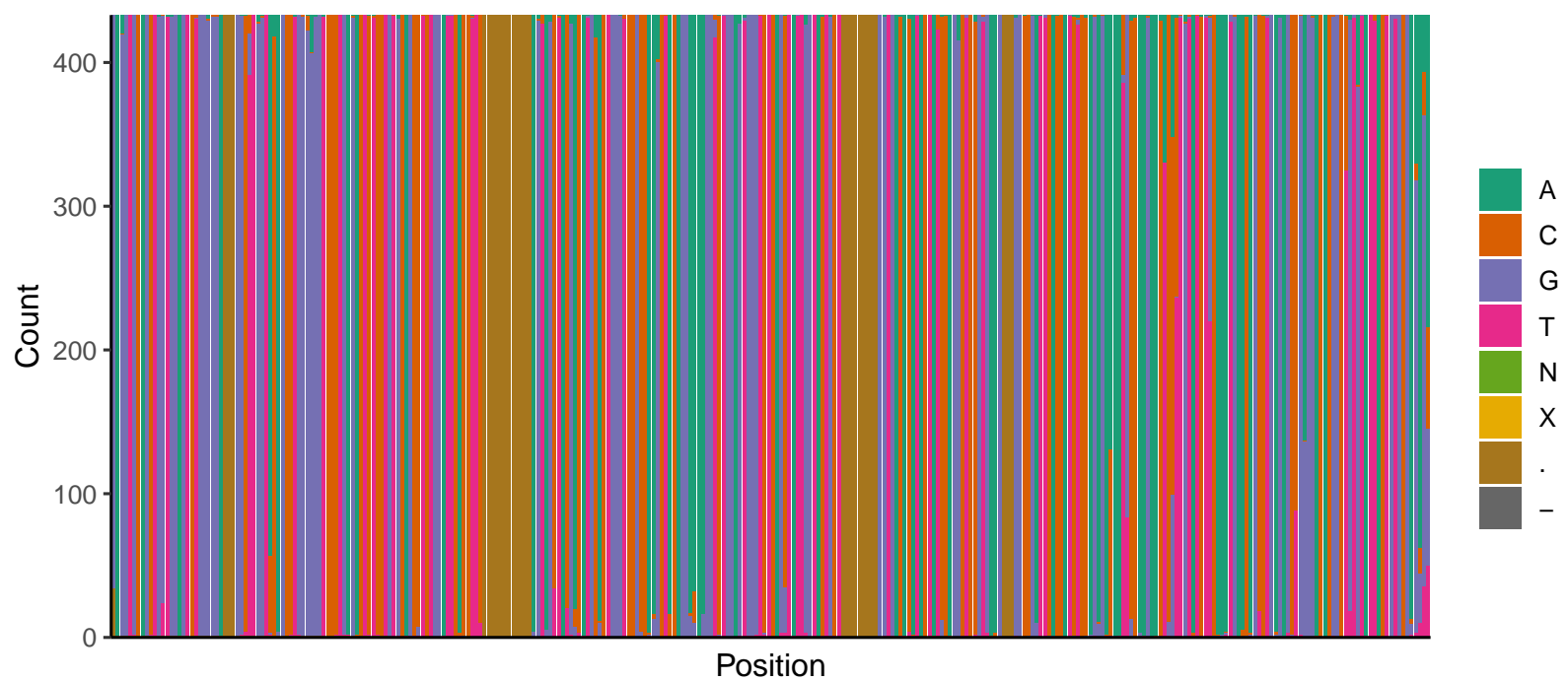
Gene IGHV2-70\*15\_G303A



Gene IGHV3-9\*01\_T194C\_C198T



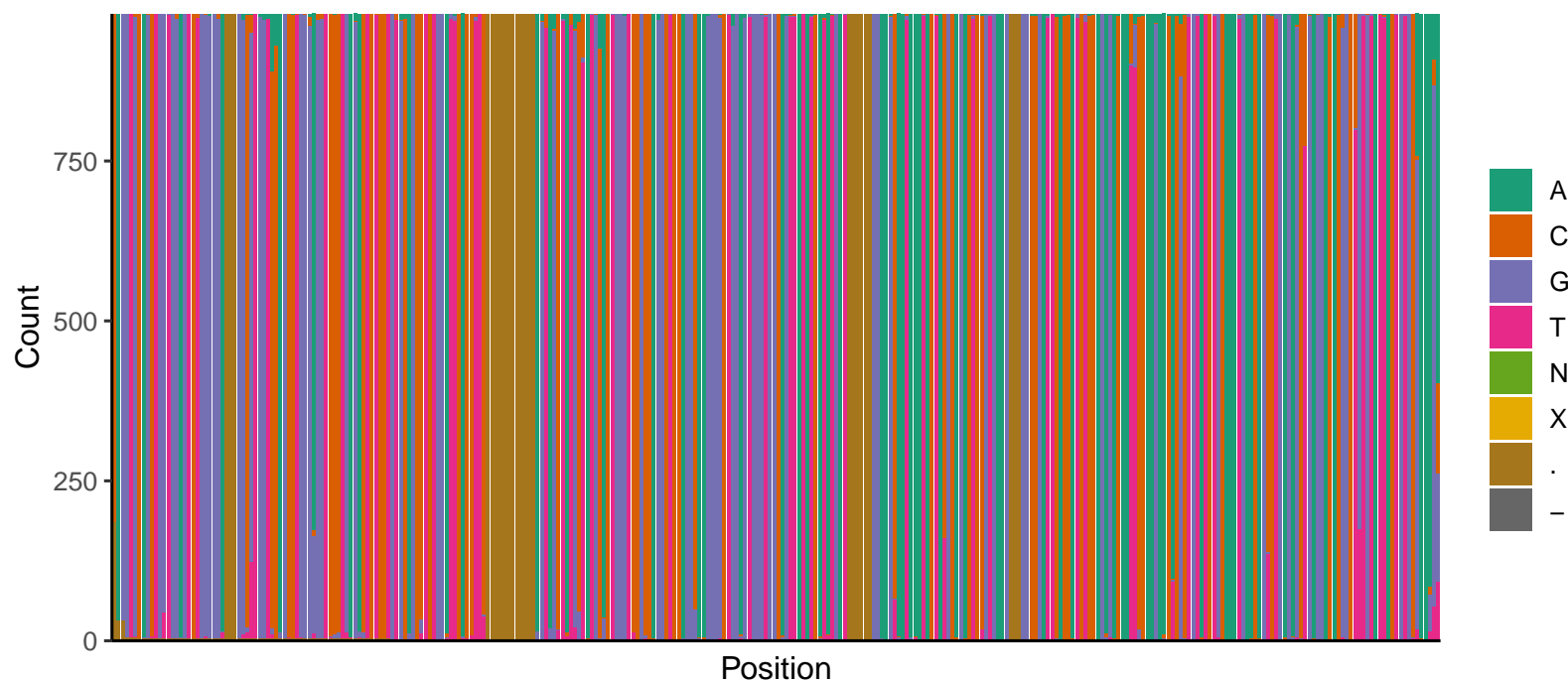
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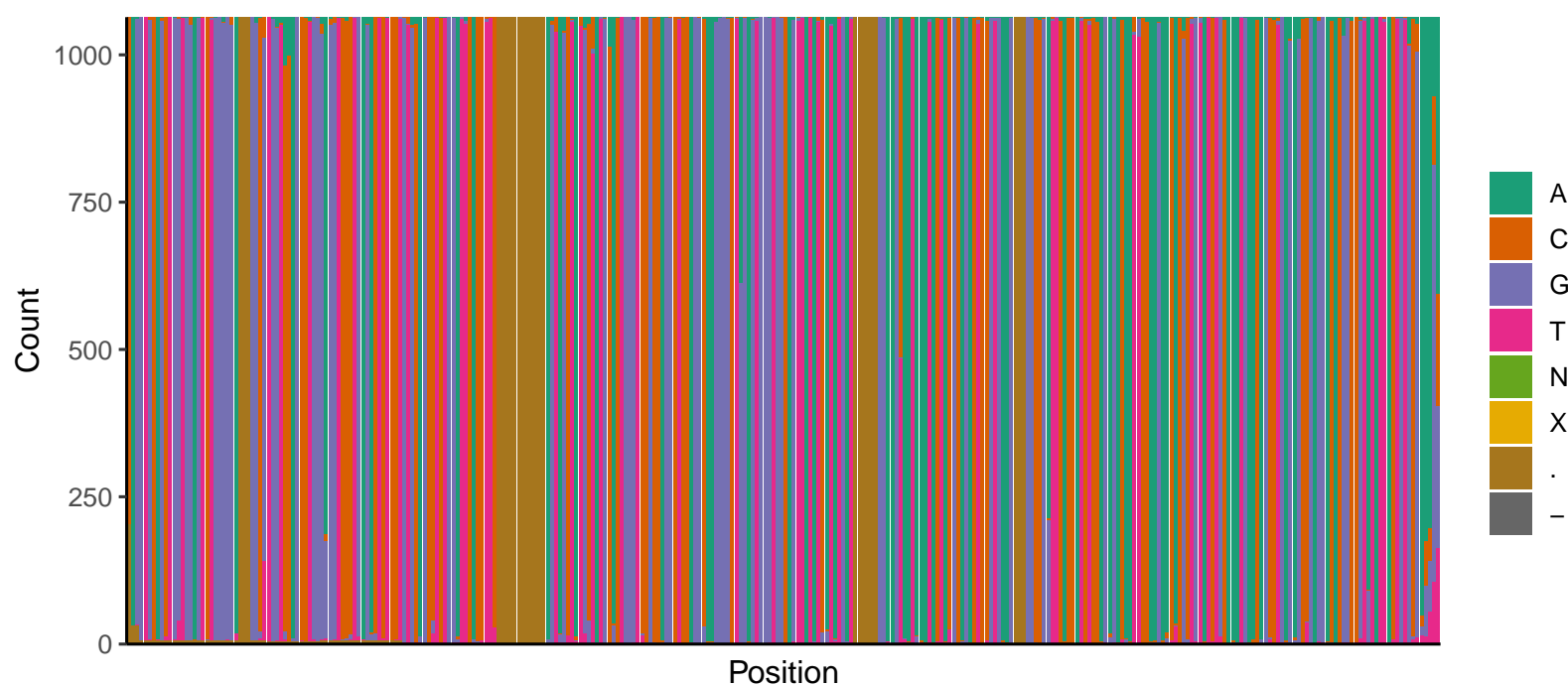
Gene IGHV3-23\*01\_A303G\_A317G



Gene IGHV3-30-3\*02\_G75C



Gene IGHV3-30-3\*02\_G75C\_T288C\_T300C\_G303A



Gene IGHV3-49\*03\_A313G\_T315G

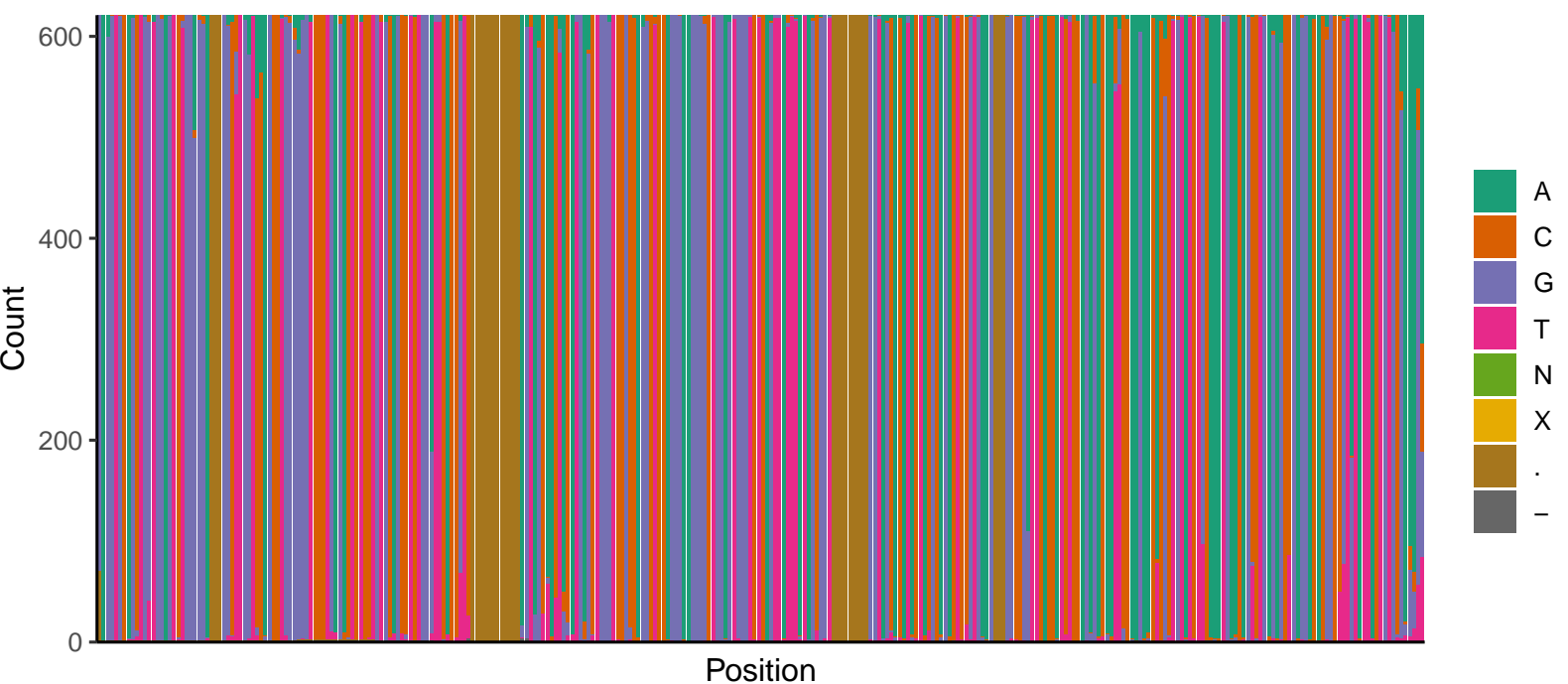




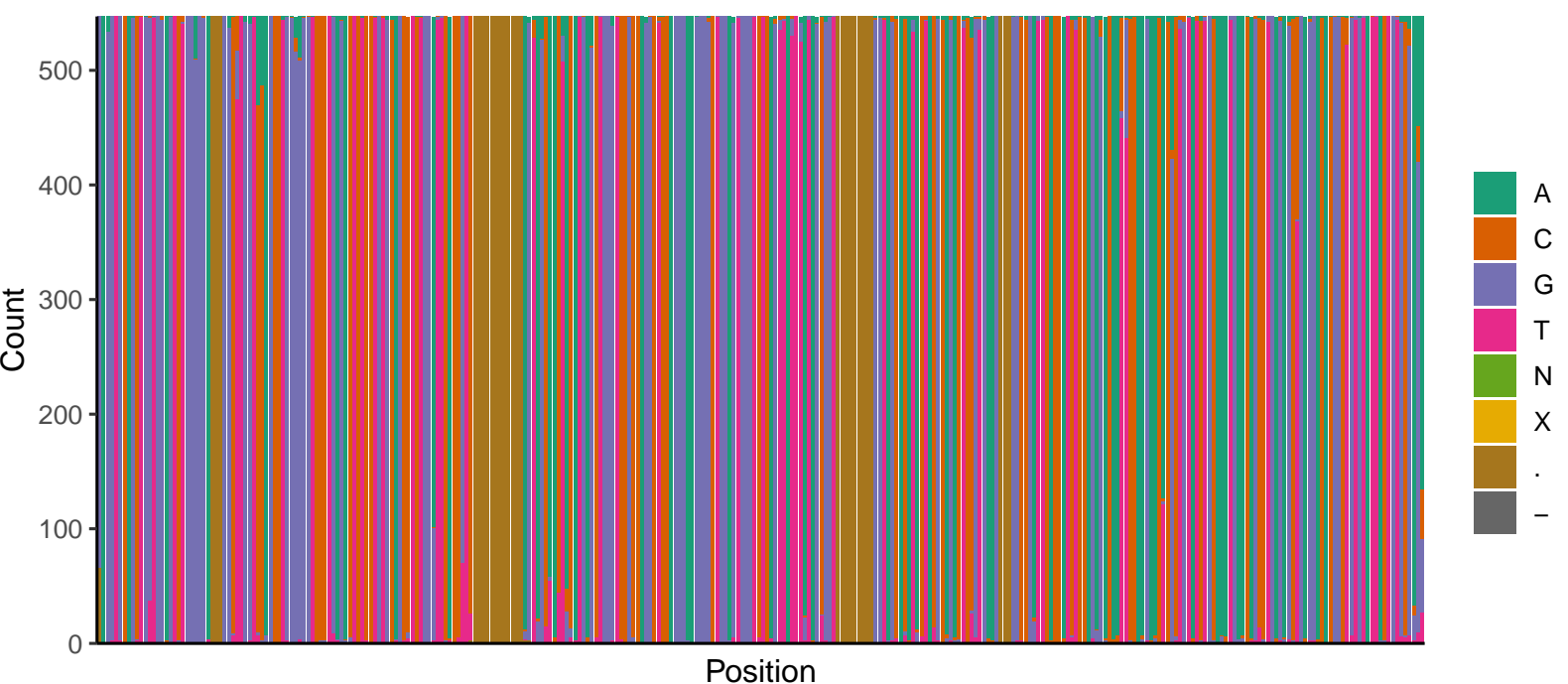
Gene IGHV3-49\*04\_A313G\_T315G



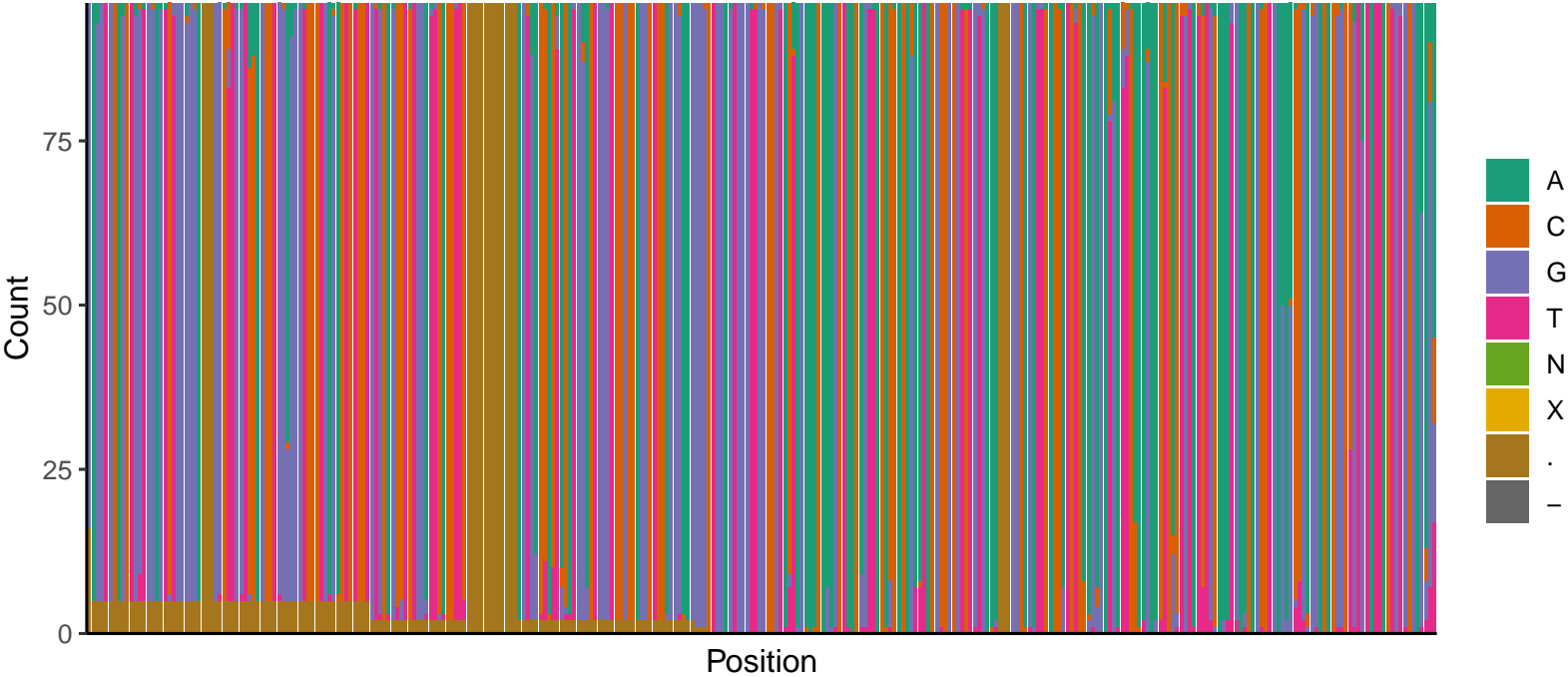
Gene IGHV3-66\*01\_A223C\_T267G\_T300C\_G303A\_G317A



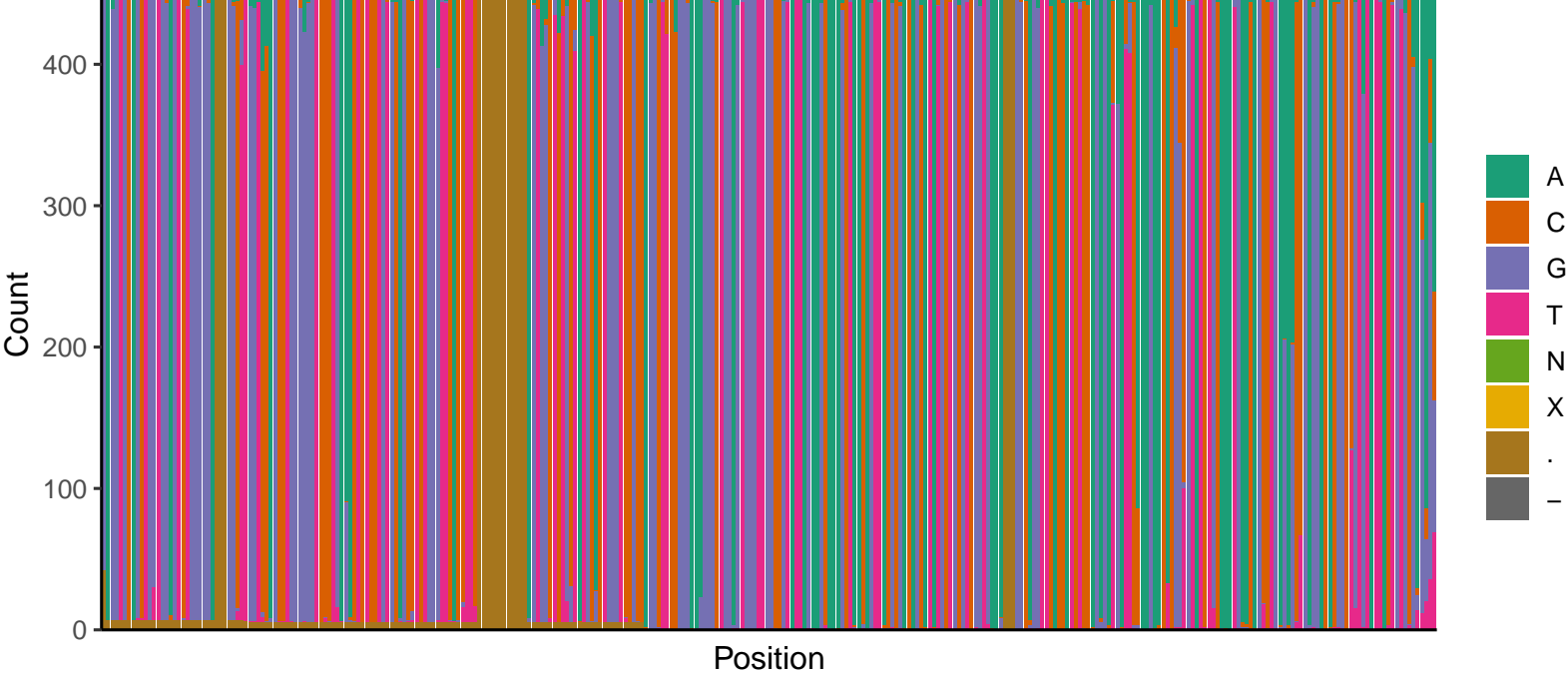
Gene IGHV3-66\*02\_T267G



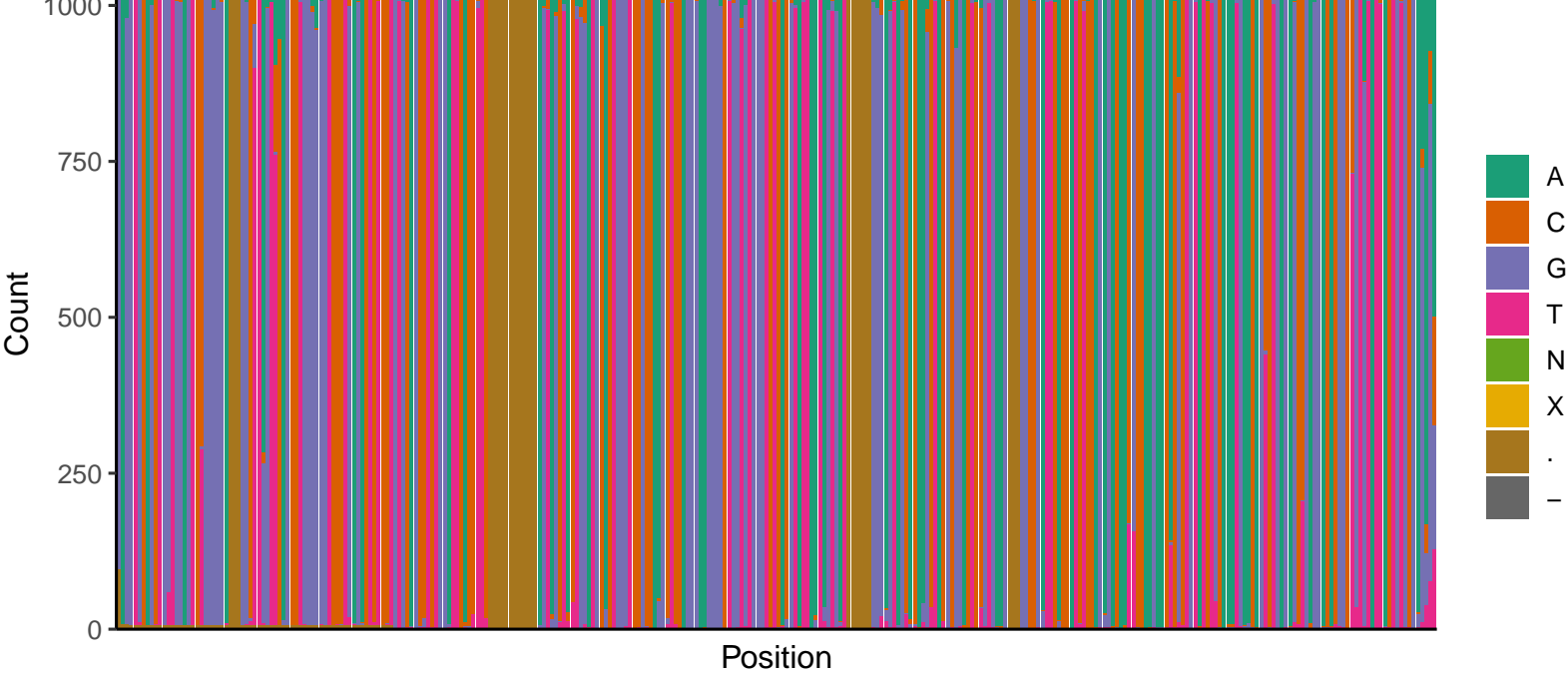
Gene IGHV3-72\*01\_T315G



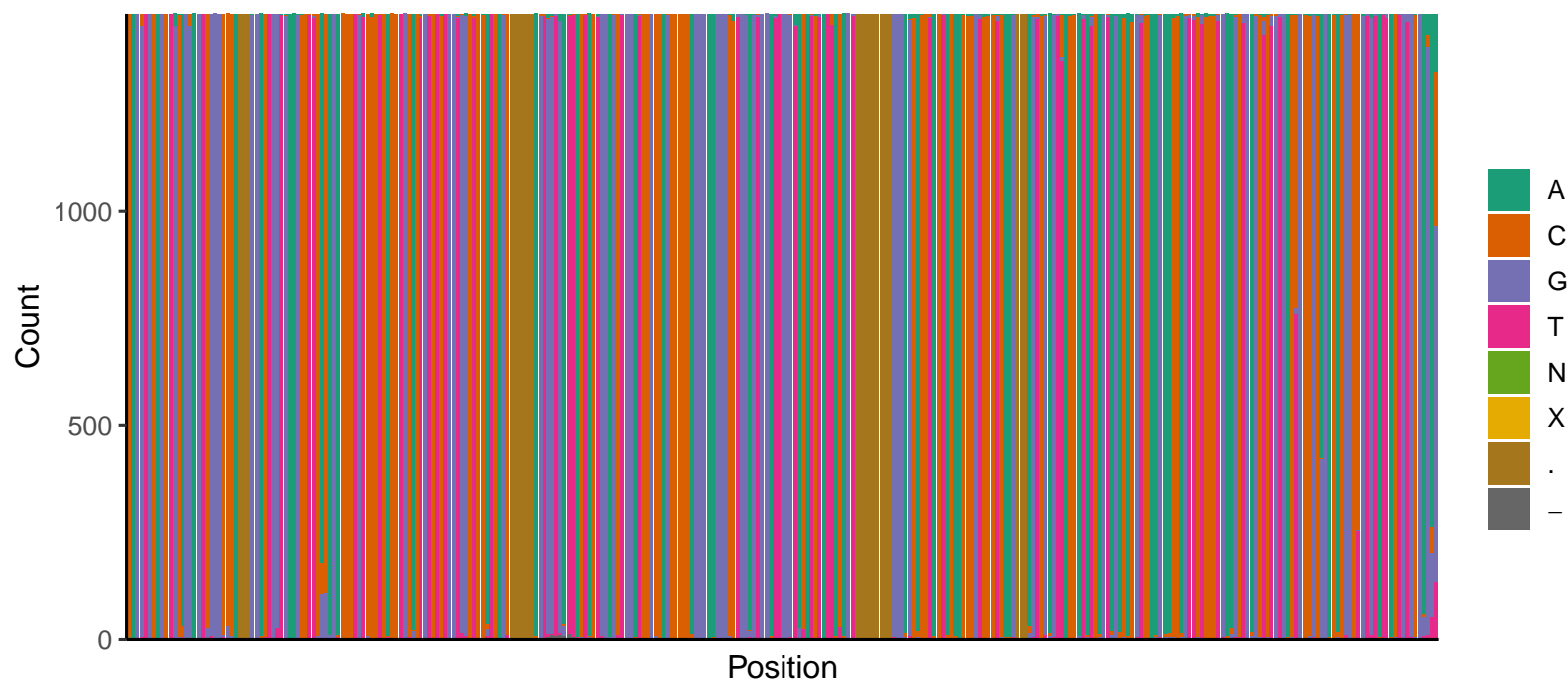
Gene IGHV3-73\*01\_A313G\_T315G



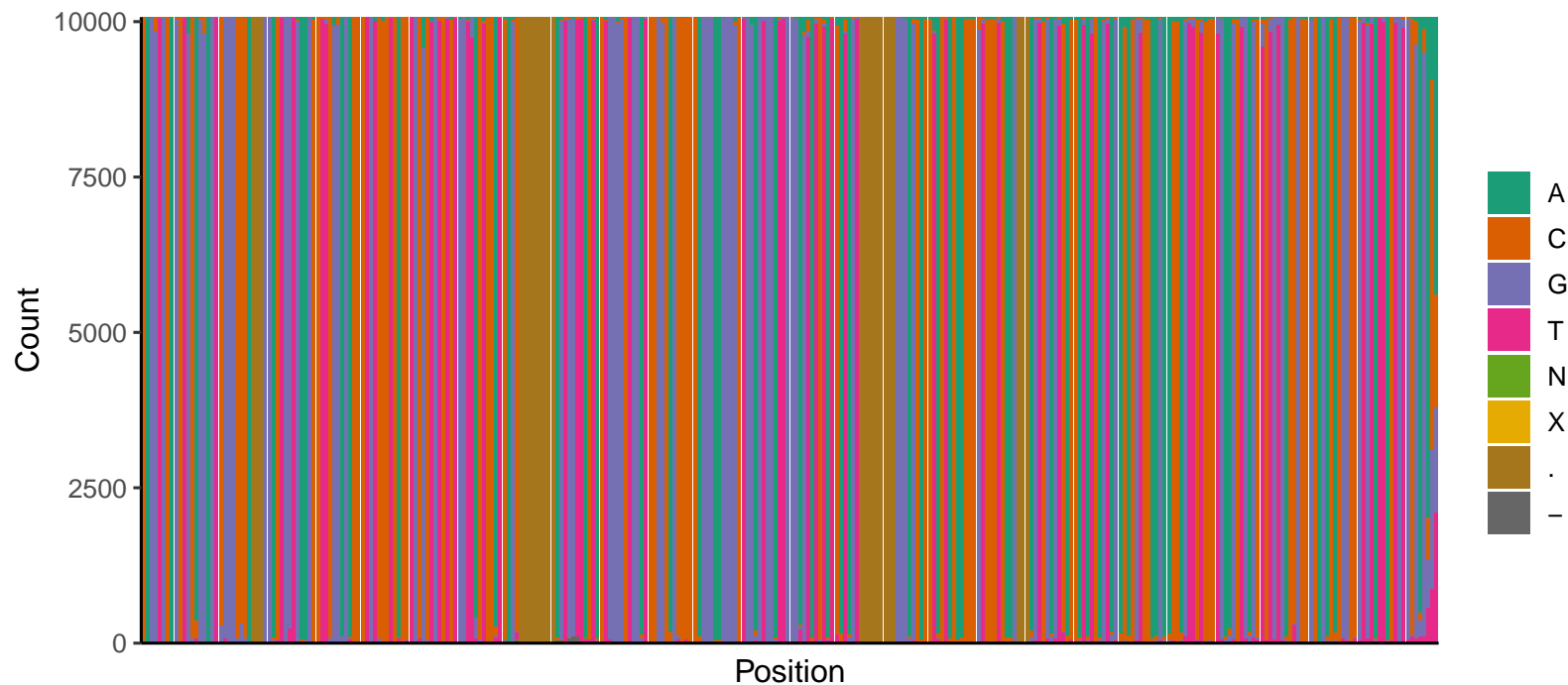
Gene IGHV3-74\*01\_A315G



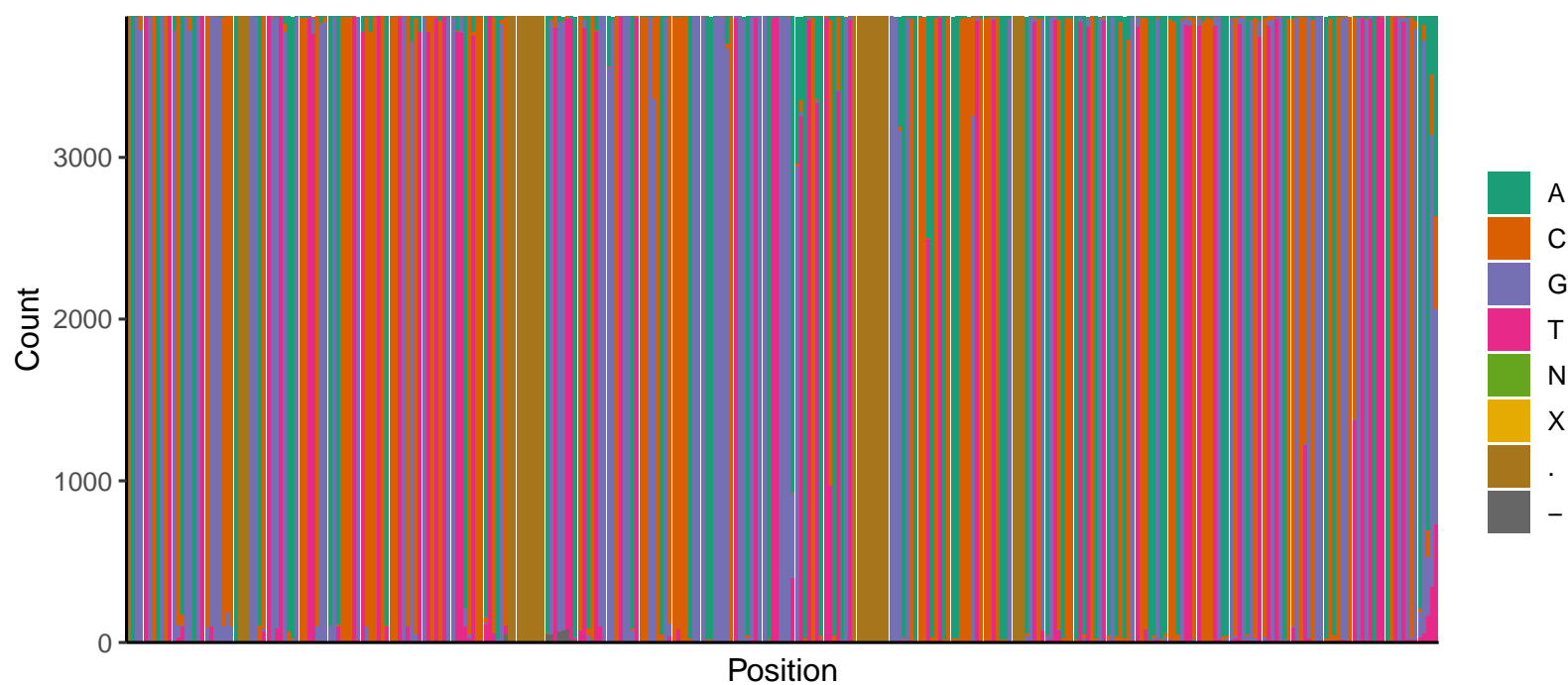
Gene IGHV4-30-4\*08\_C315G



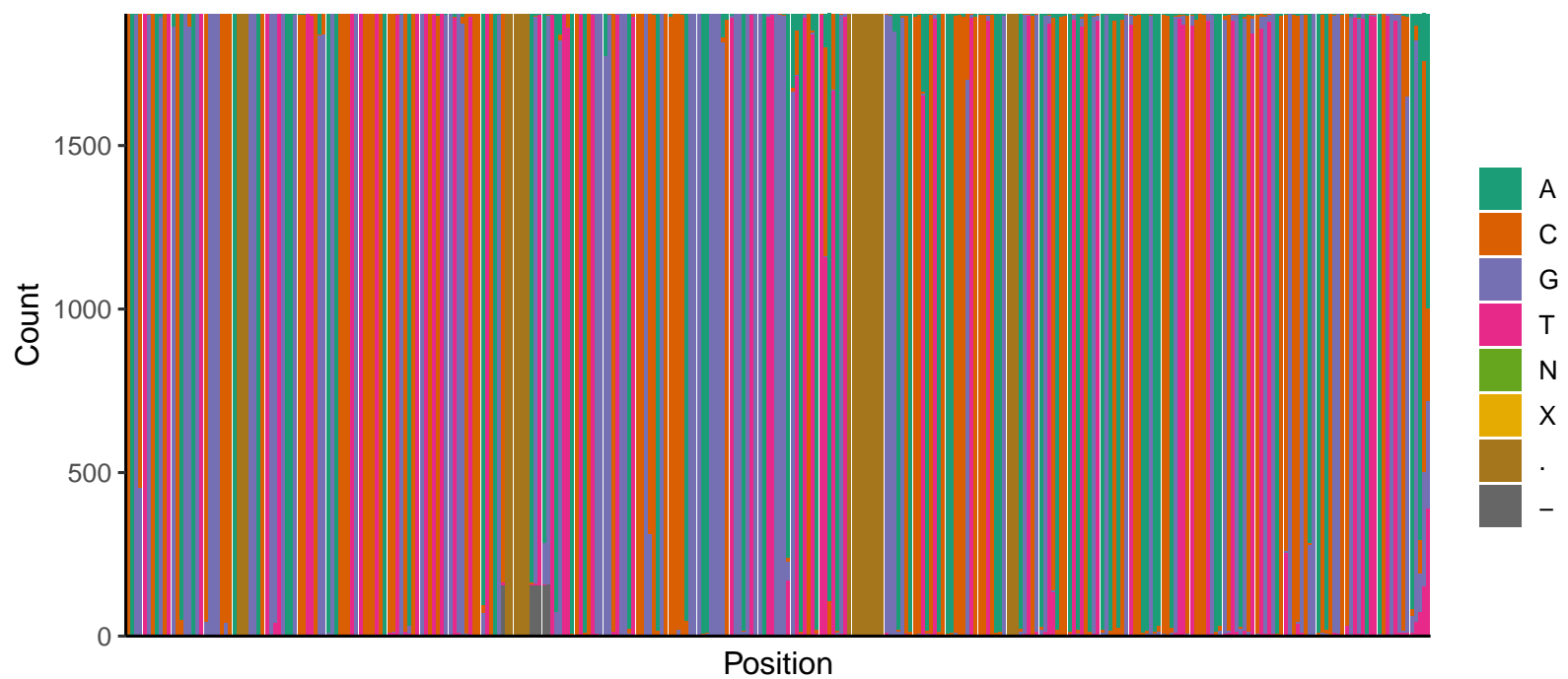
Gene IGHV4-38-2\*02\_A70G



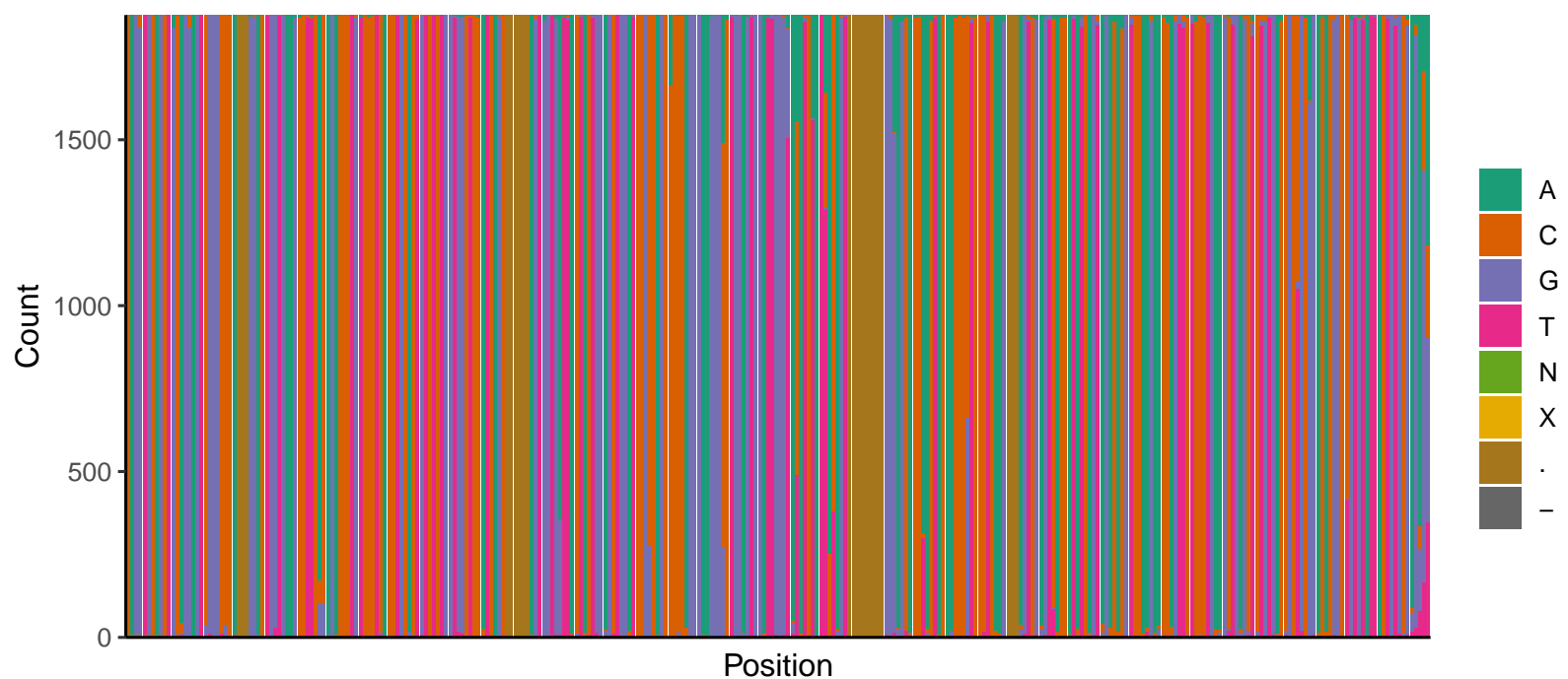
Gene IGHV4-38-2\*02\_A70G\_A291G



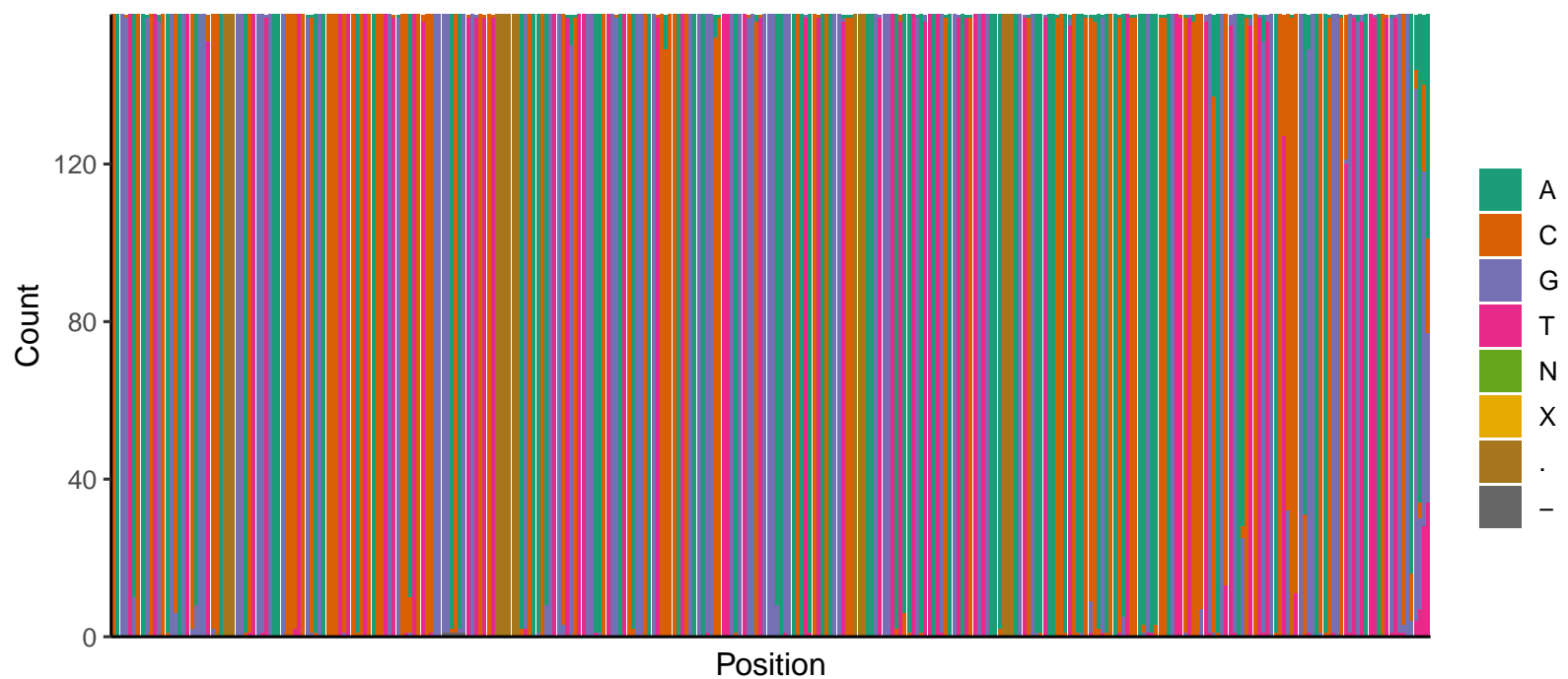
Gene IGHV4-39\*01\_C237A\_T300C



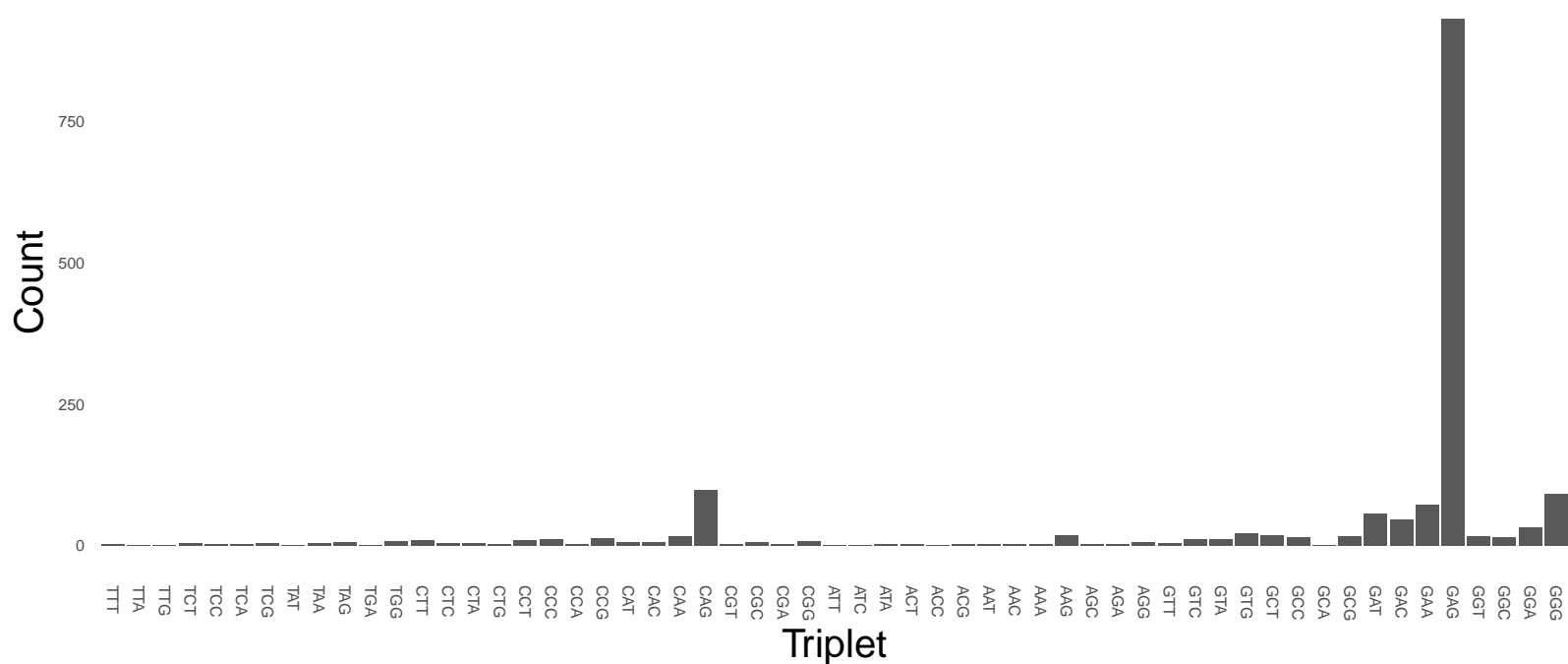
Gene IGHV4-61\*08\_G48A\_G49C\_G88A\_G107A\_G129C\_A147C\_T165C



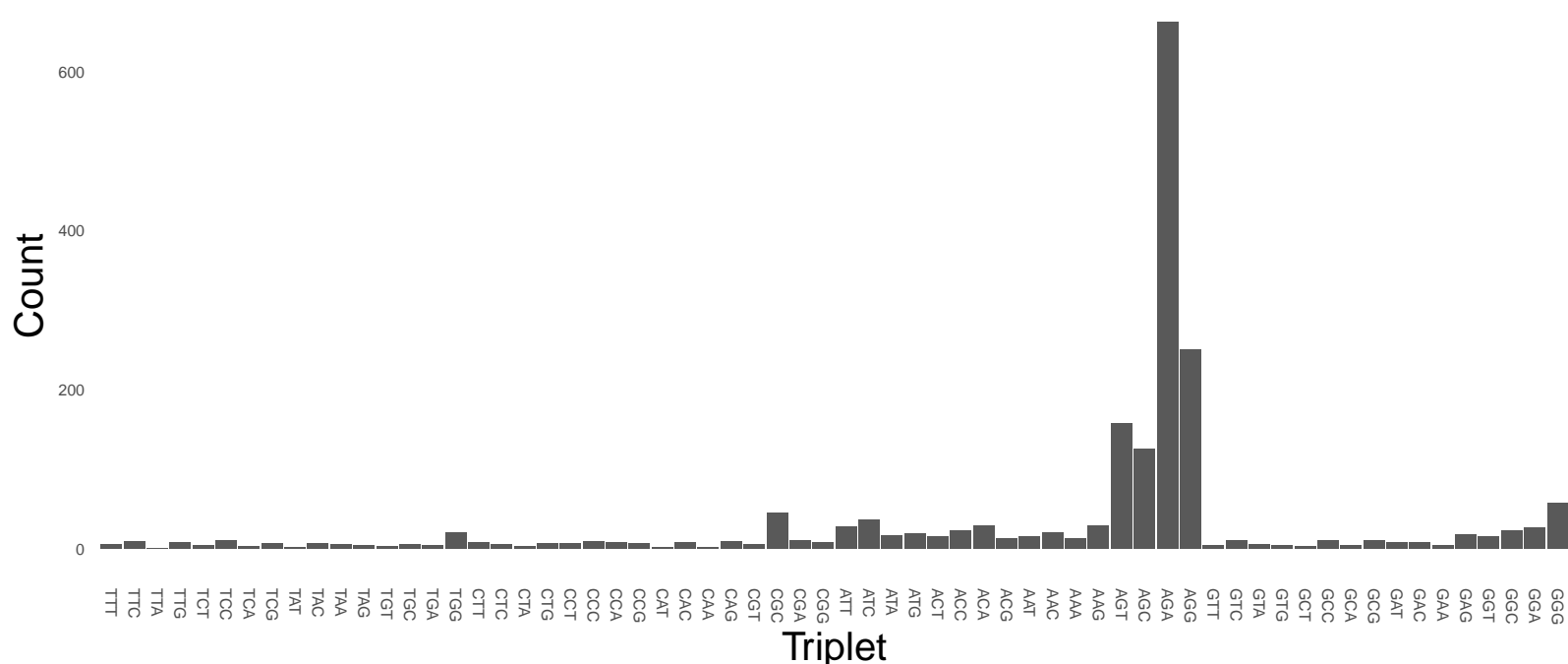
Gene IGHV6-1\*01\_A315G



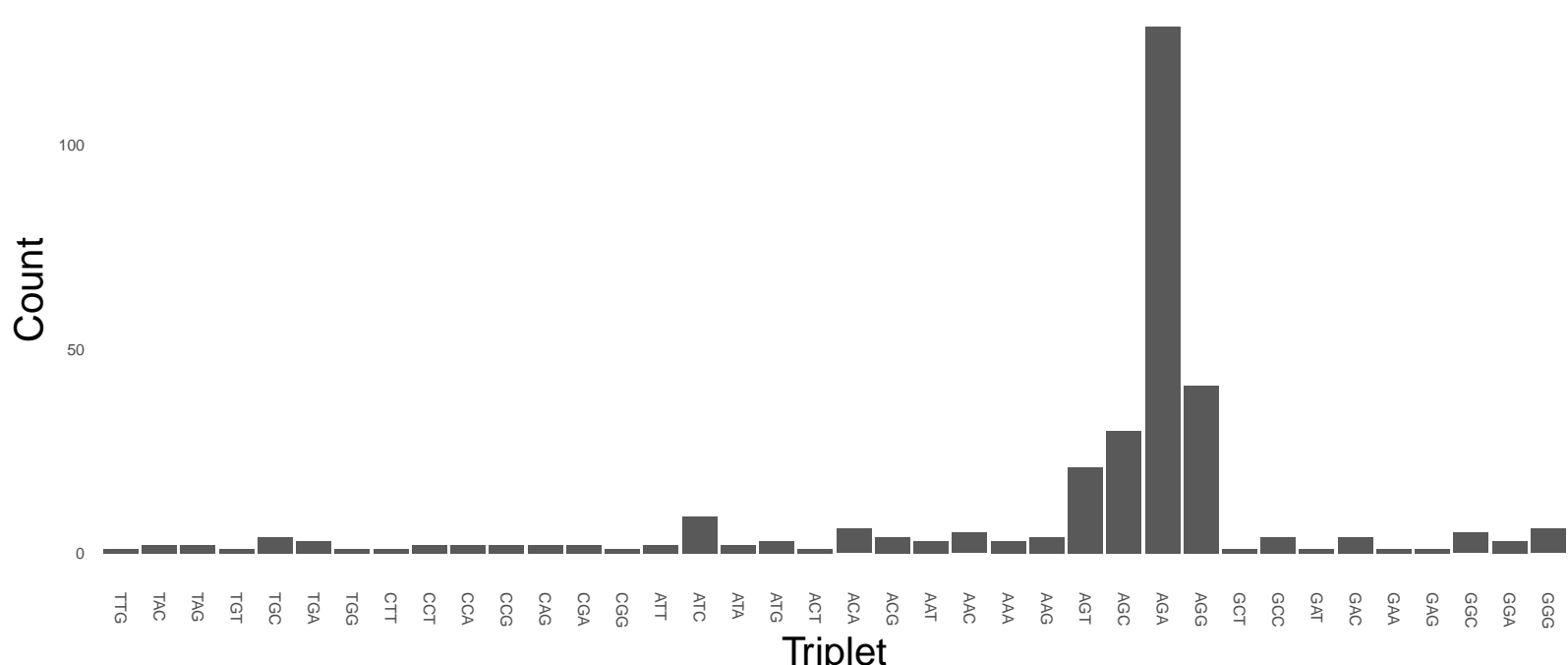
IGHV1-3\*04\_A291G\_T300C- Final 3 nucleotides as a triplet



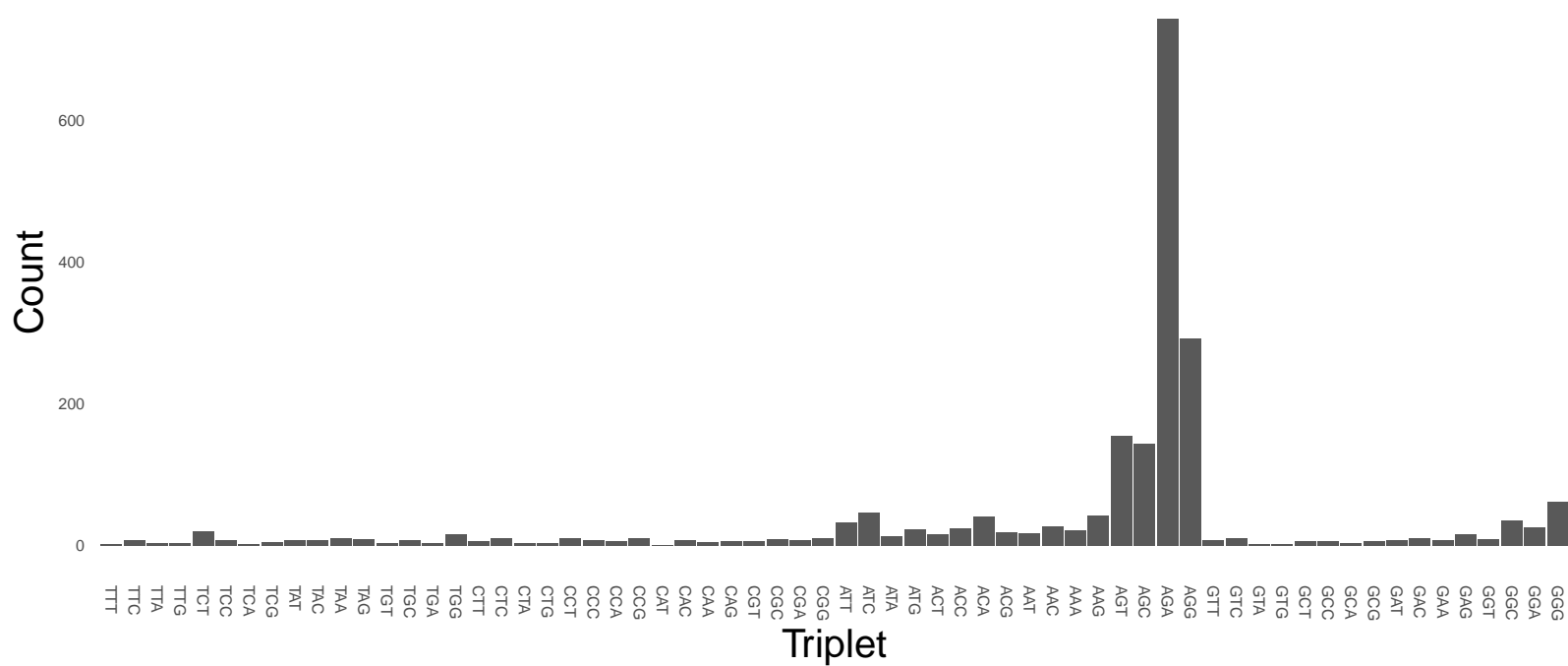
IGHV1-24\*01\_A315G\_C317G- Final 3 nucleotides as a triplet



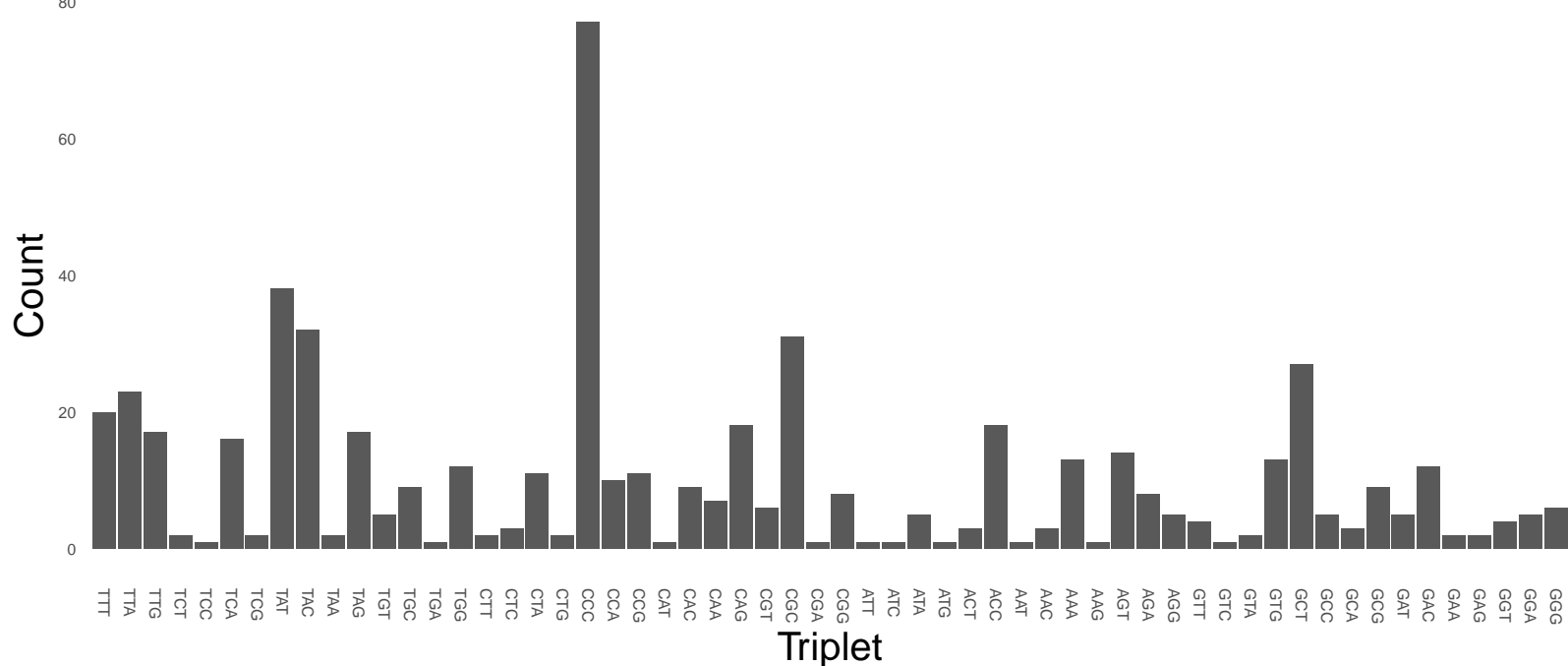
IGHV1-58\*02\_G316A\_C317G- Final 3 nucleotides as a triplet



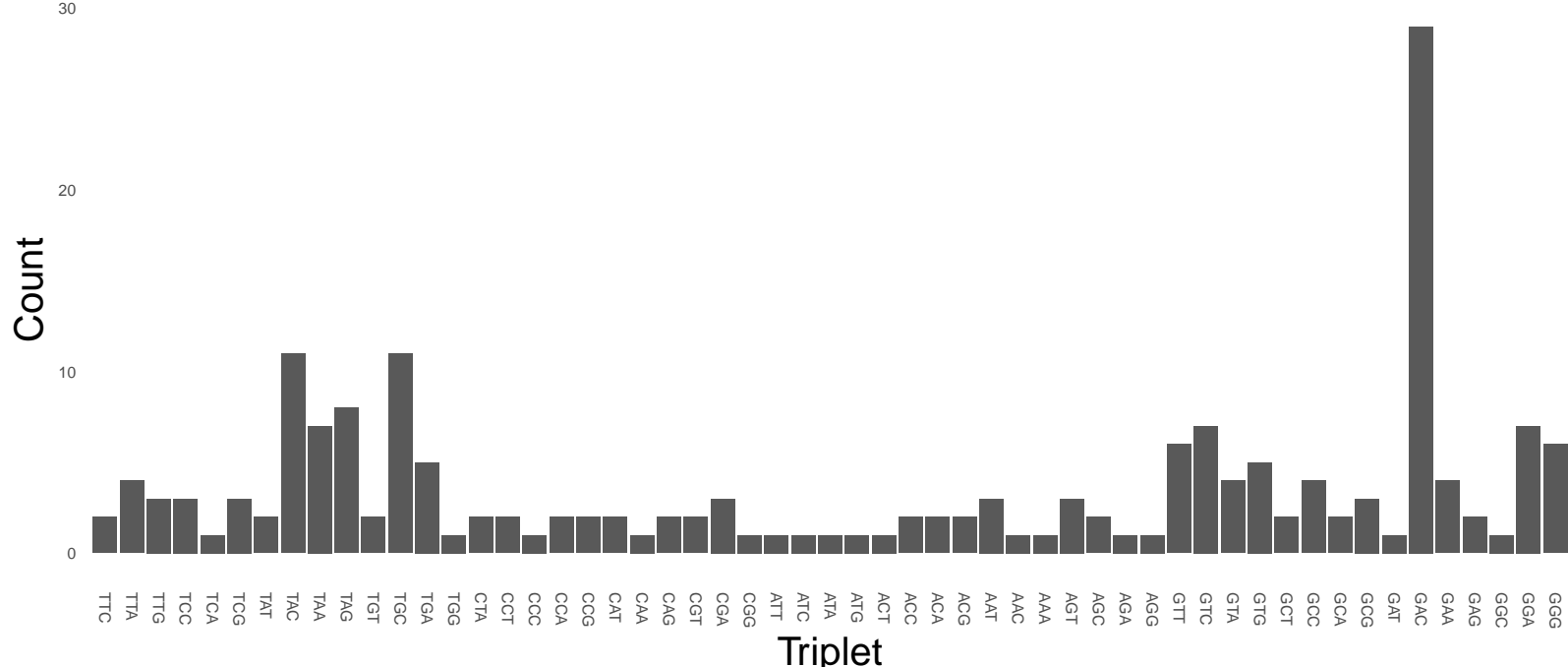
IGHV1-69-2\*01\_A315G\_C317G- Final 3 nucleotides as a triplet



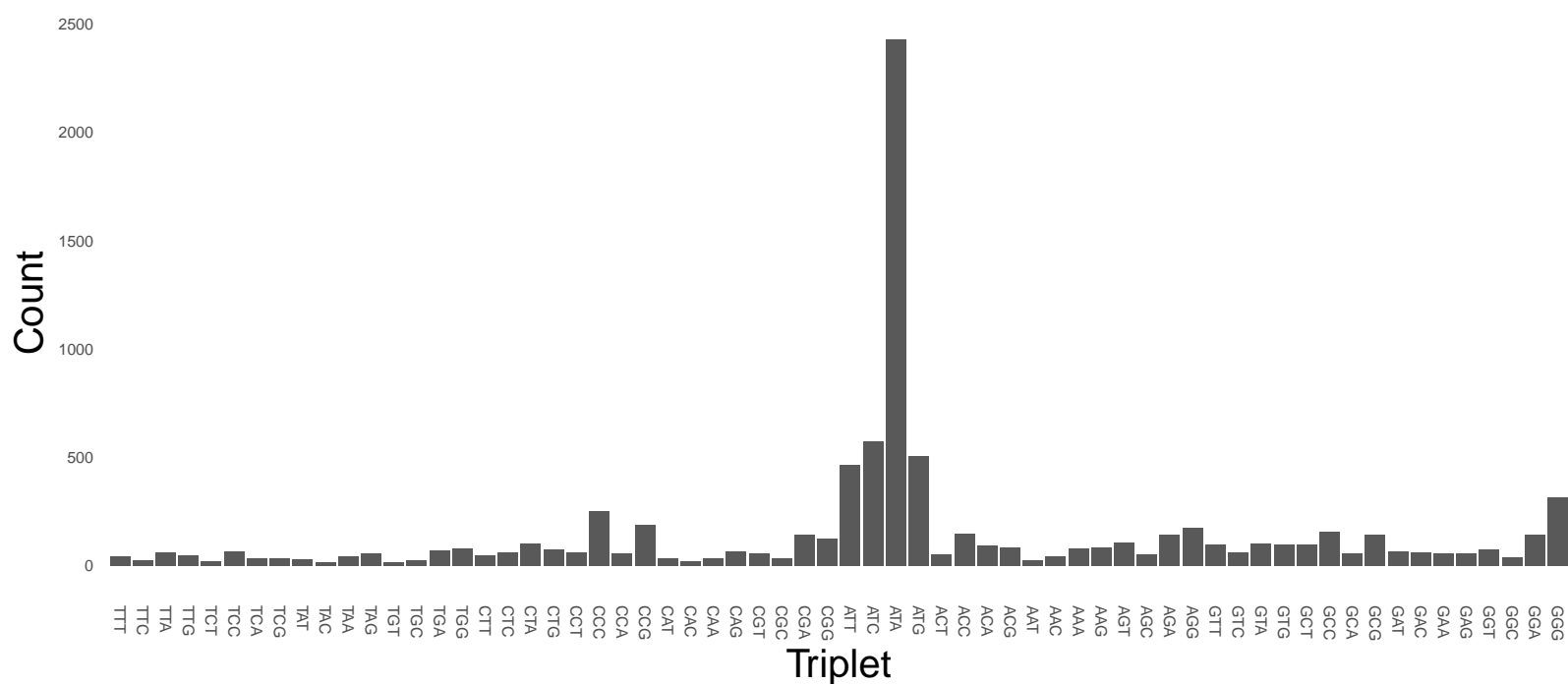
IGHV2-70\*04\_C6T- Final 3 nucleotides as a triplet



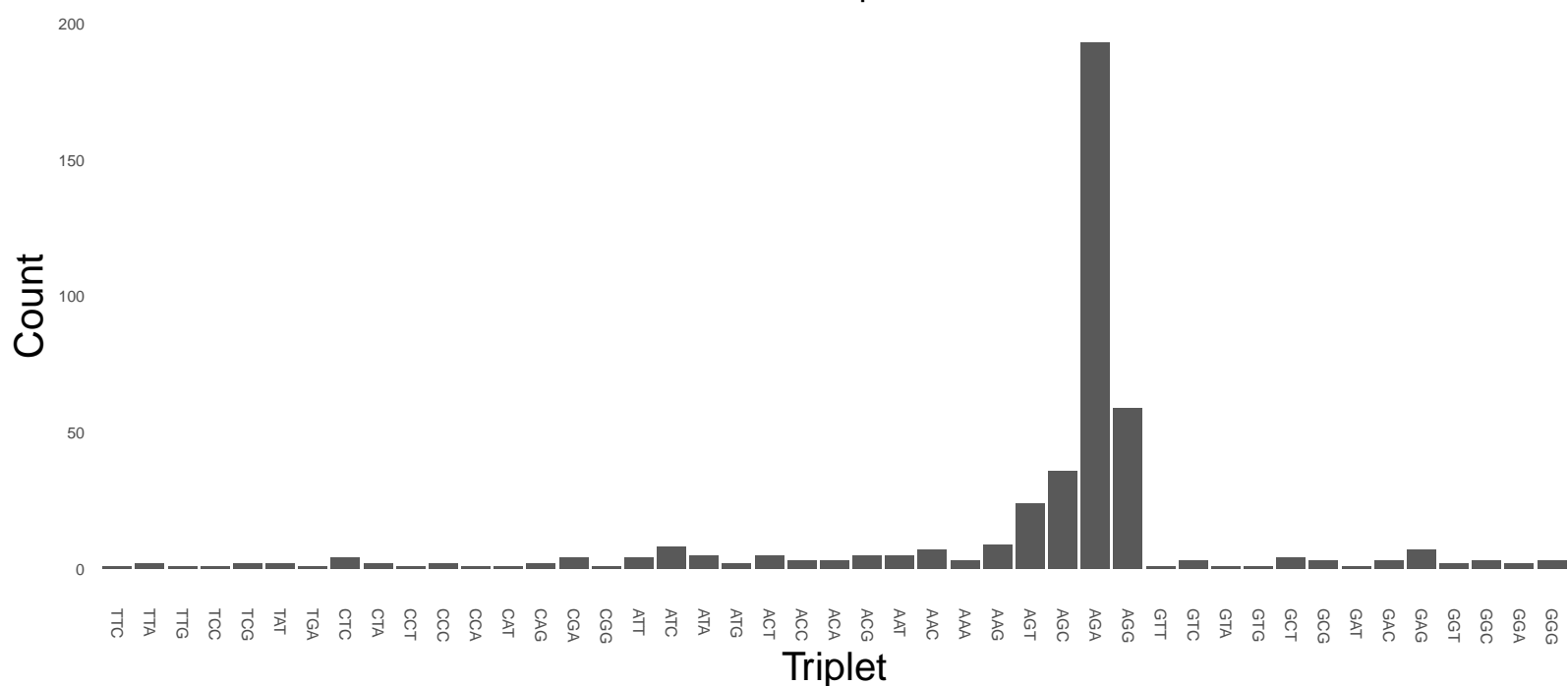
IGHV2-70\*15\_G303A- Final 3 nucleotides as a triplet



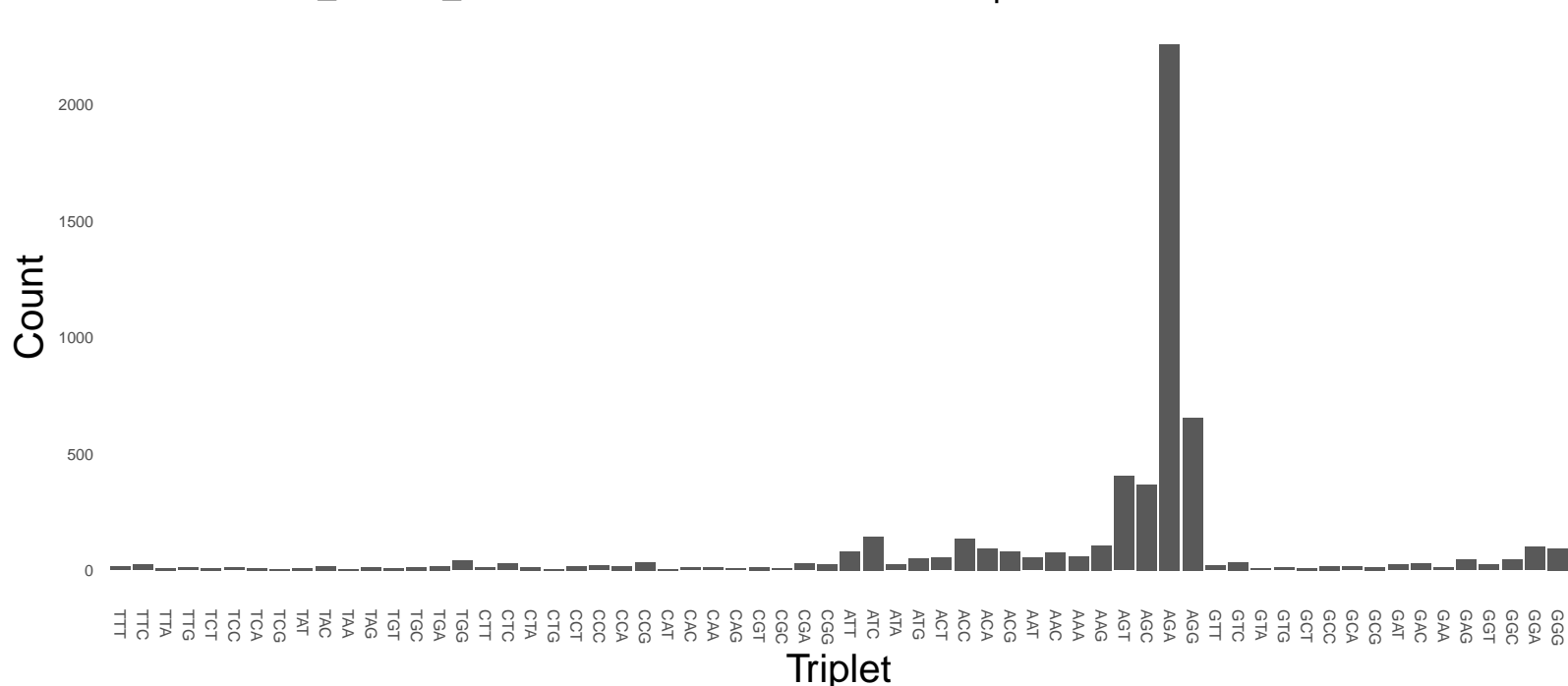
IGHV3-9\*01\_T194C\_C198T- Final 3 nucleotides as a triplet



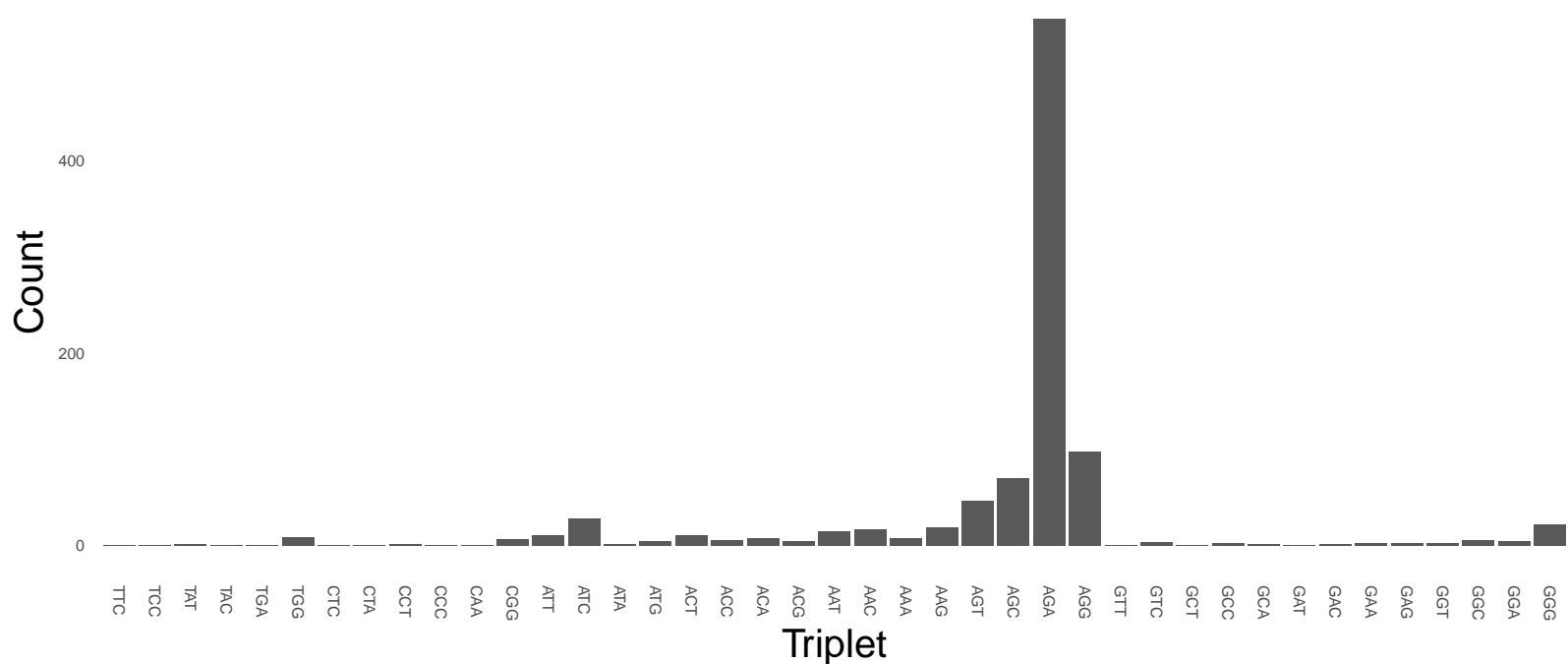
IGHV3-13\*01\_A315G- Final 3 nucleotides as a triplet



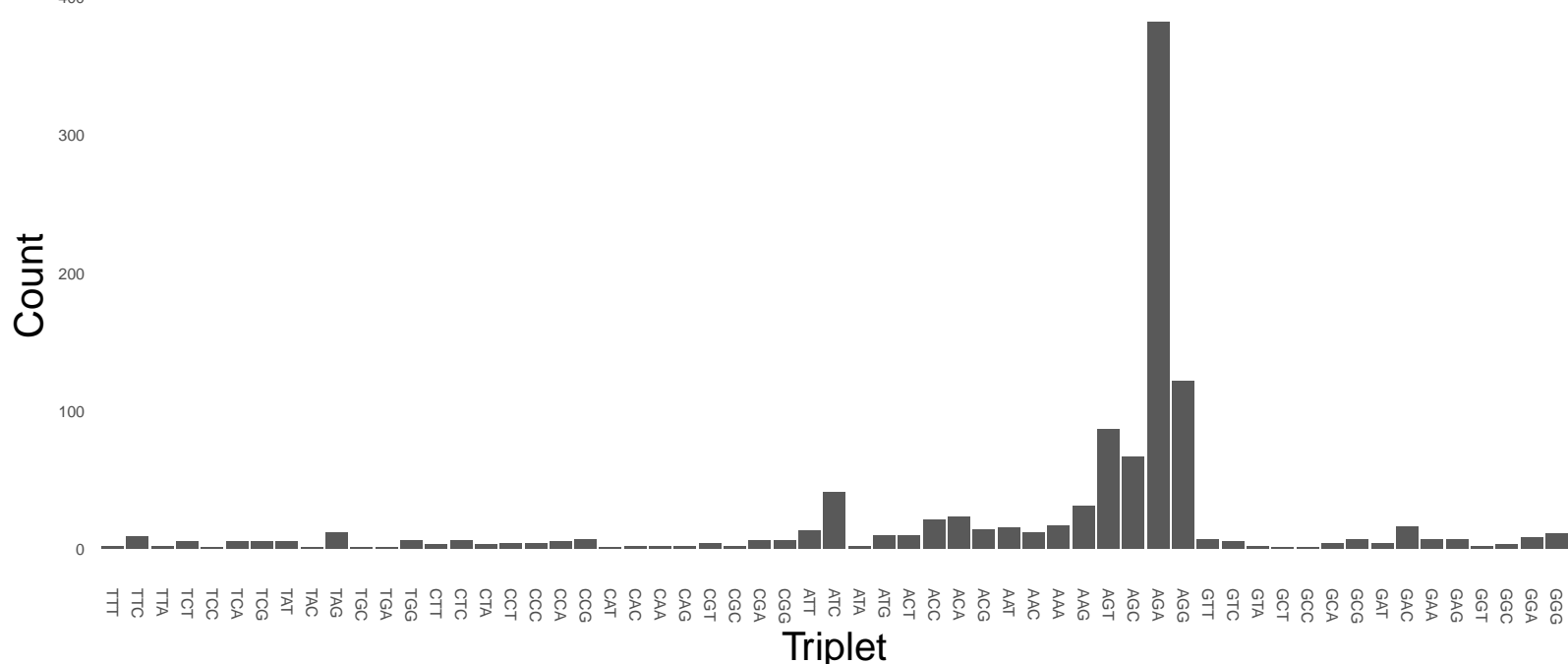
IGHV3-23\*01\_A303G\_A317G- Final 3 nucleotides as a triplet



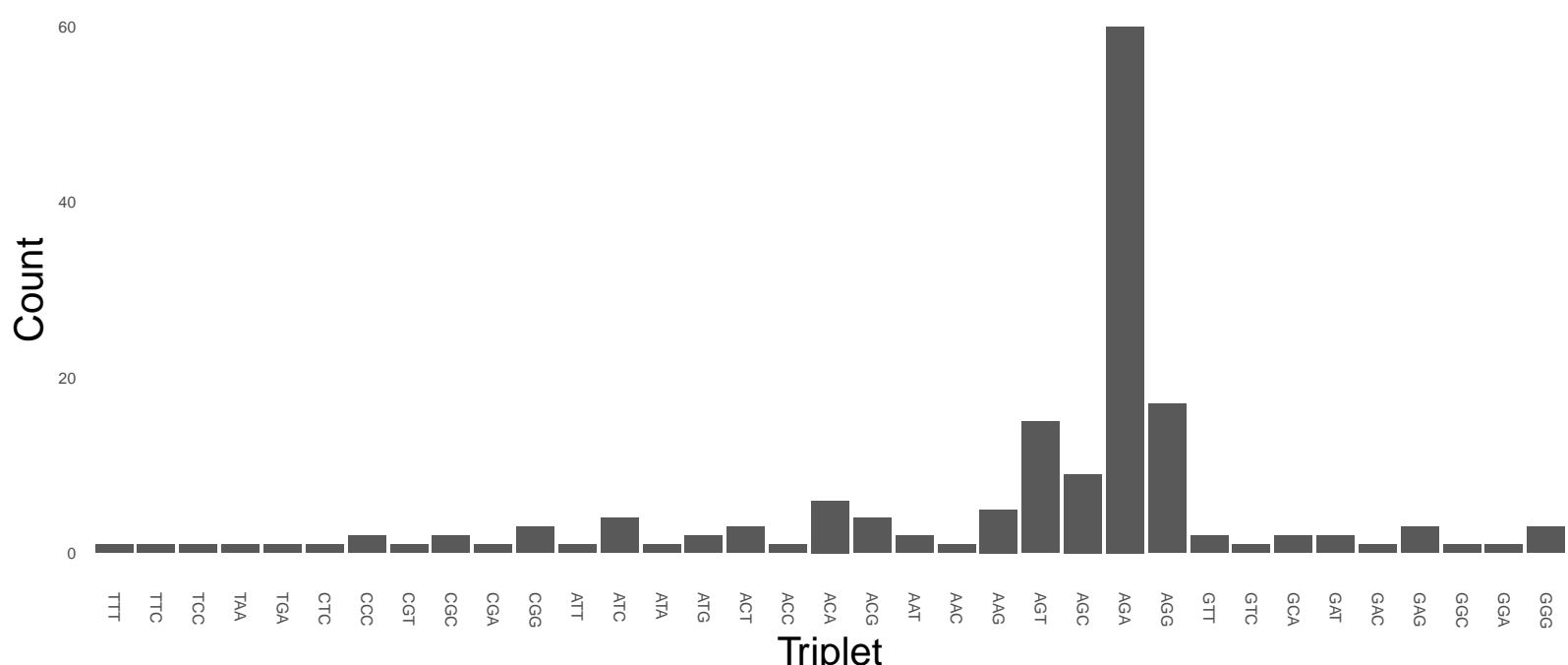
IGHV3-30-3\*02\_G75C- Final 3 nucleotides as a triplet



IGHV3-30-3\*02\_G75C\_T288C\_T300C\_G303A- Final 3 nucleotides as a triplet

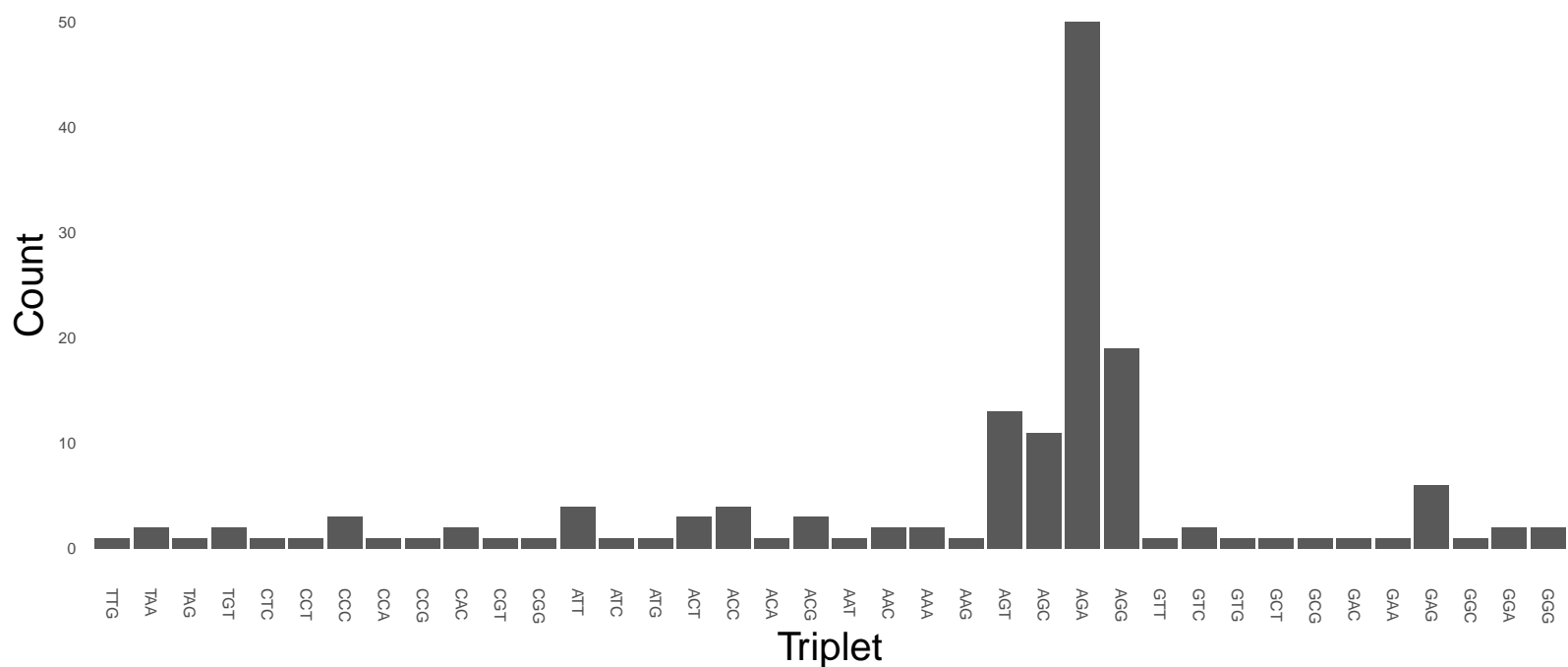


IGHV3-49\*03\_A313G\_T315G- Final 3 nucleotides as a triplet

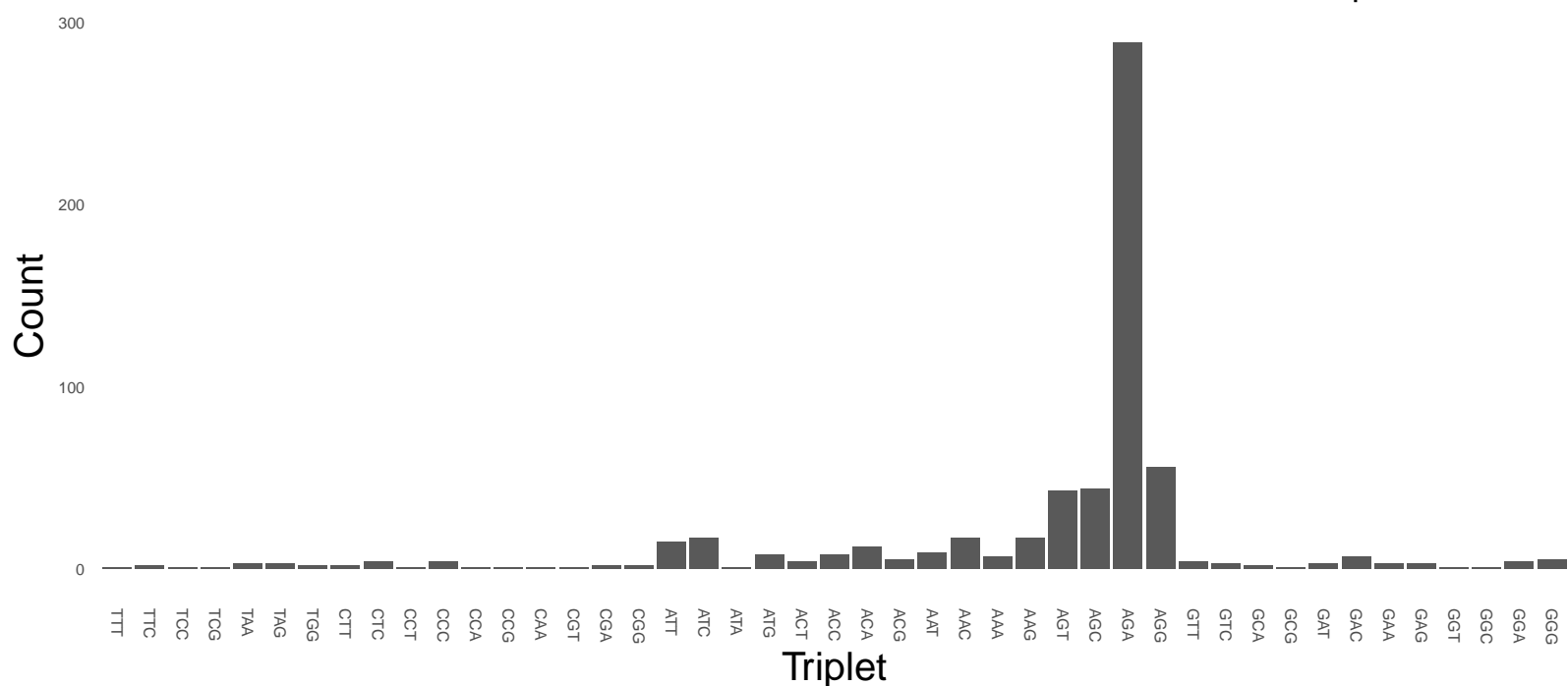




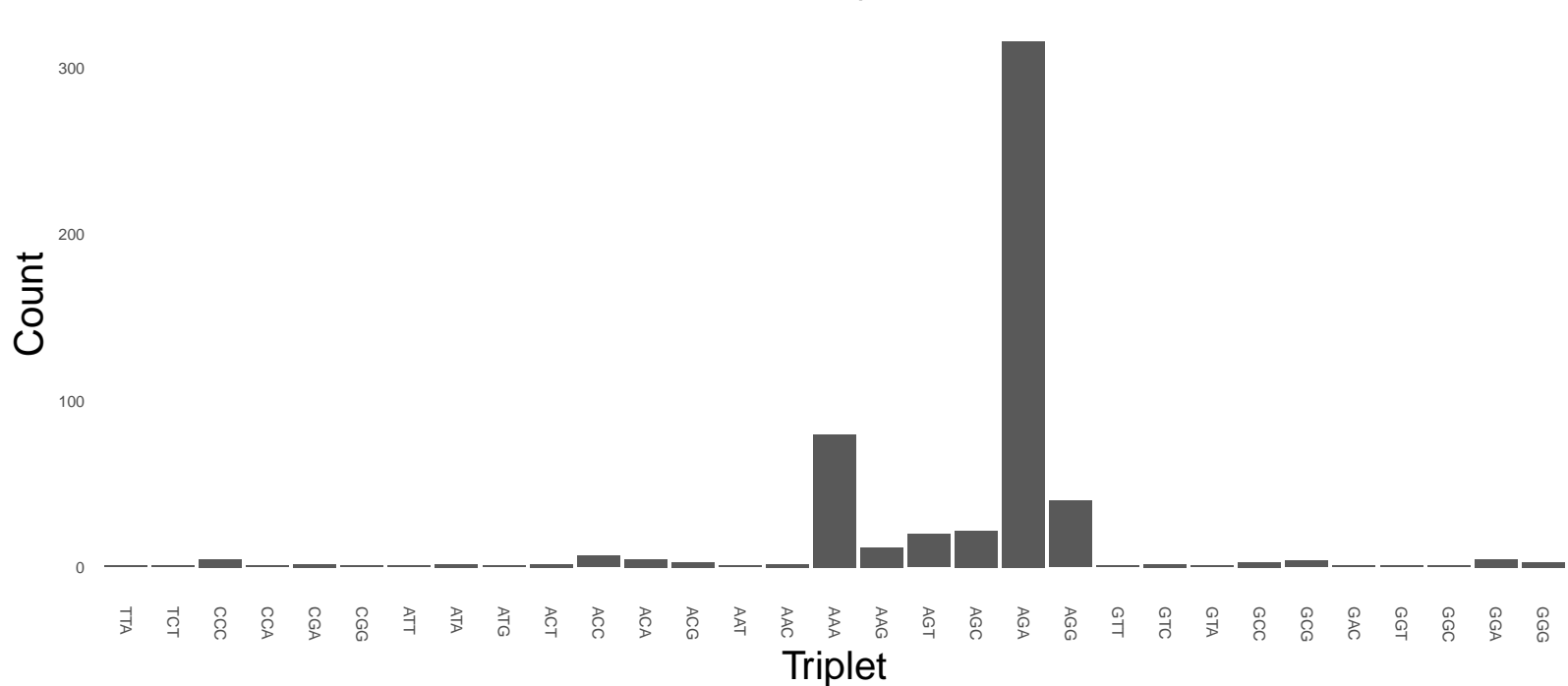
IGHV3-49\*04\_A313G\_T315G- Final 3 nucleotides as a triplet



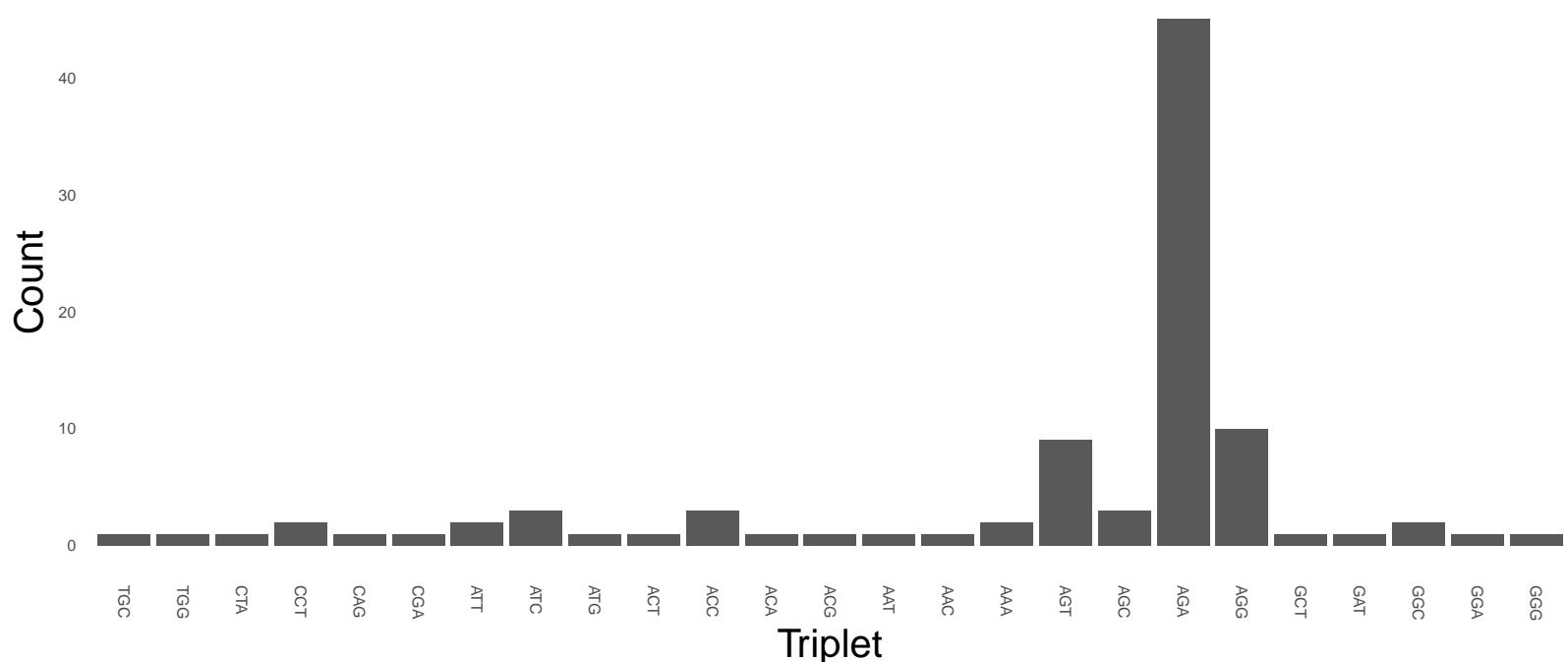
IGHV3-66\*01\_A223C\_T267G\_T300C\_G303A\_G317A- Final 3 nucleotides as a triplet



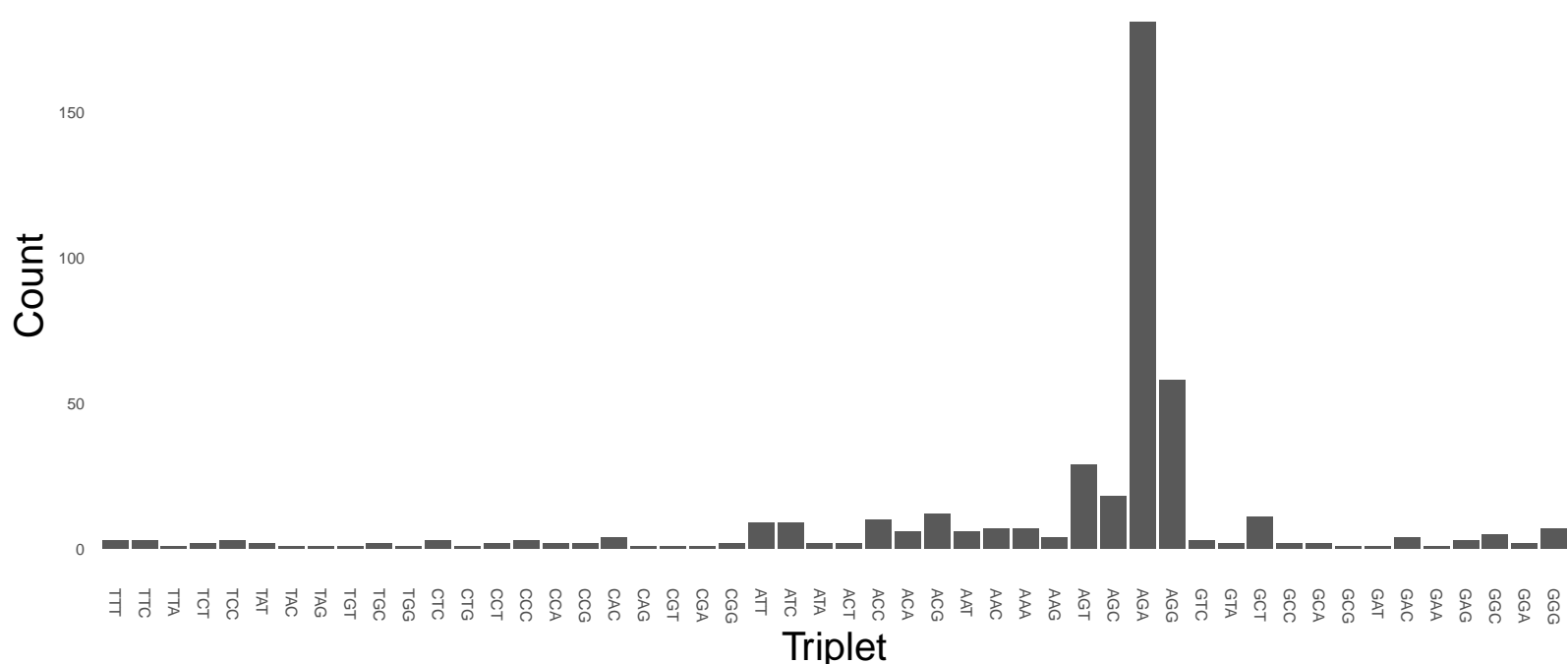
IGHV3-66\*02\_T267G- Final 3 nucleotides as a triplet



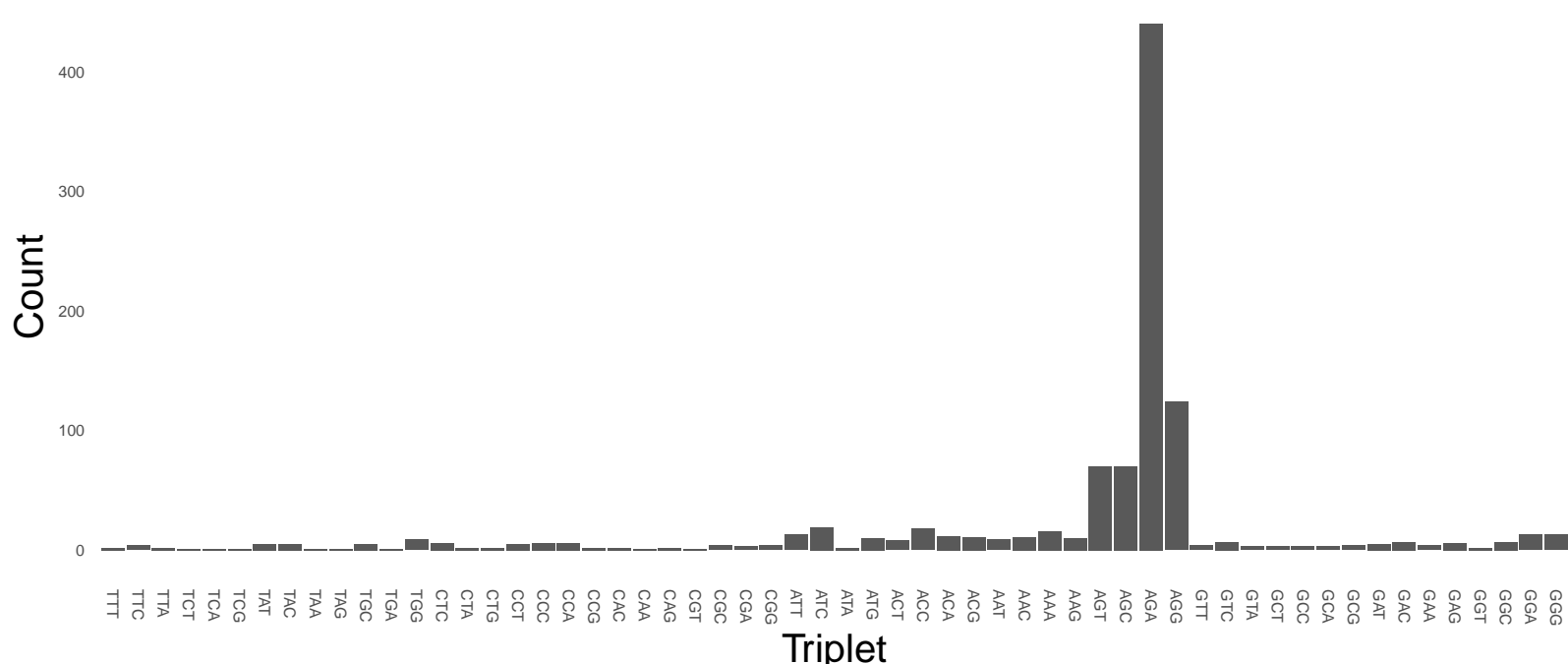
IGHV3-72\*01\_T315G- Final 3 nucleotides as a triplet



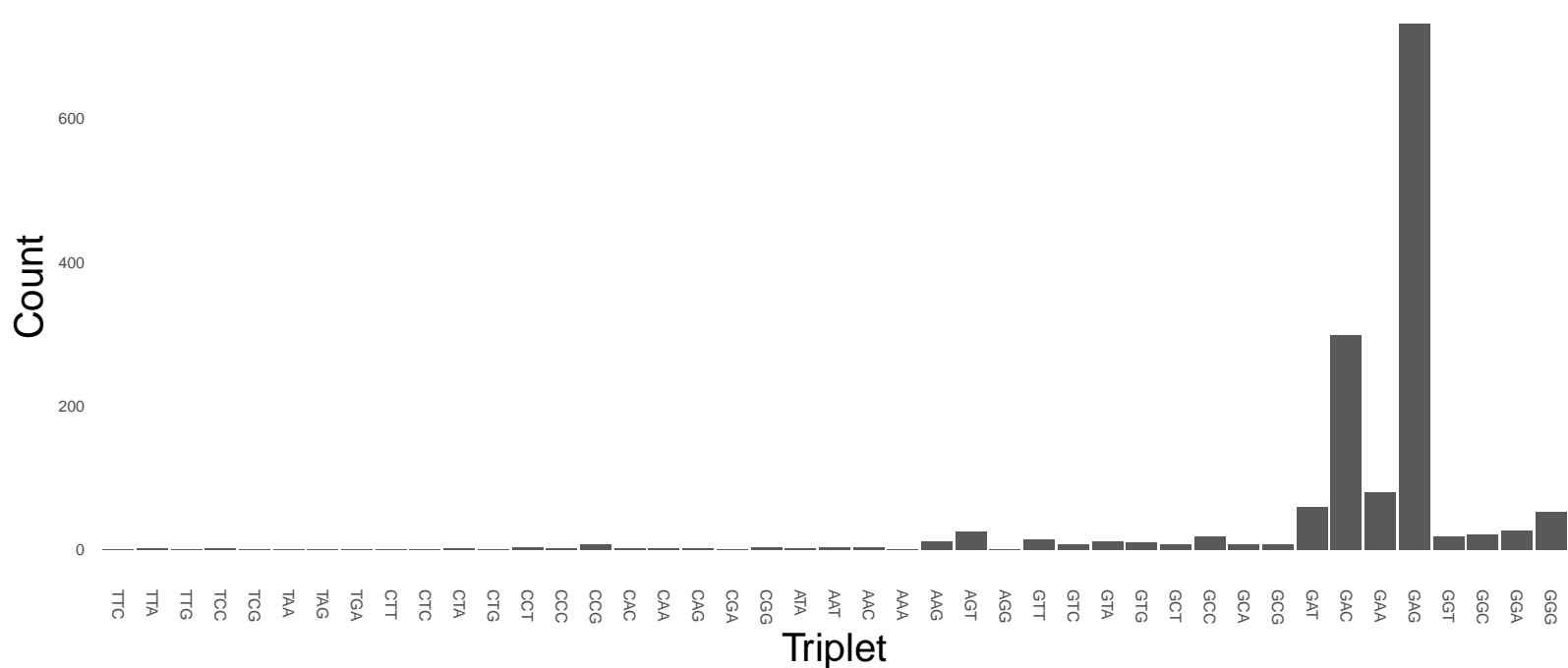
IGHV3-73\*01\_A313G\_T315G- Final 3 nucleotides as a triplet



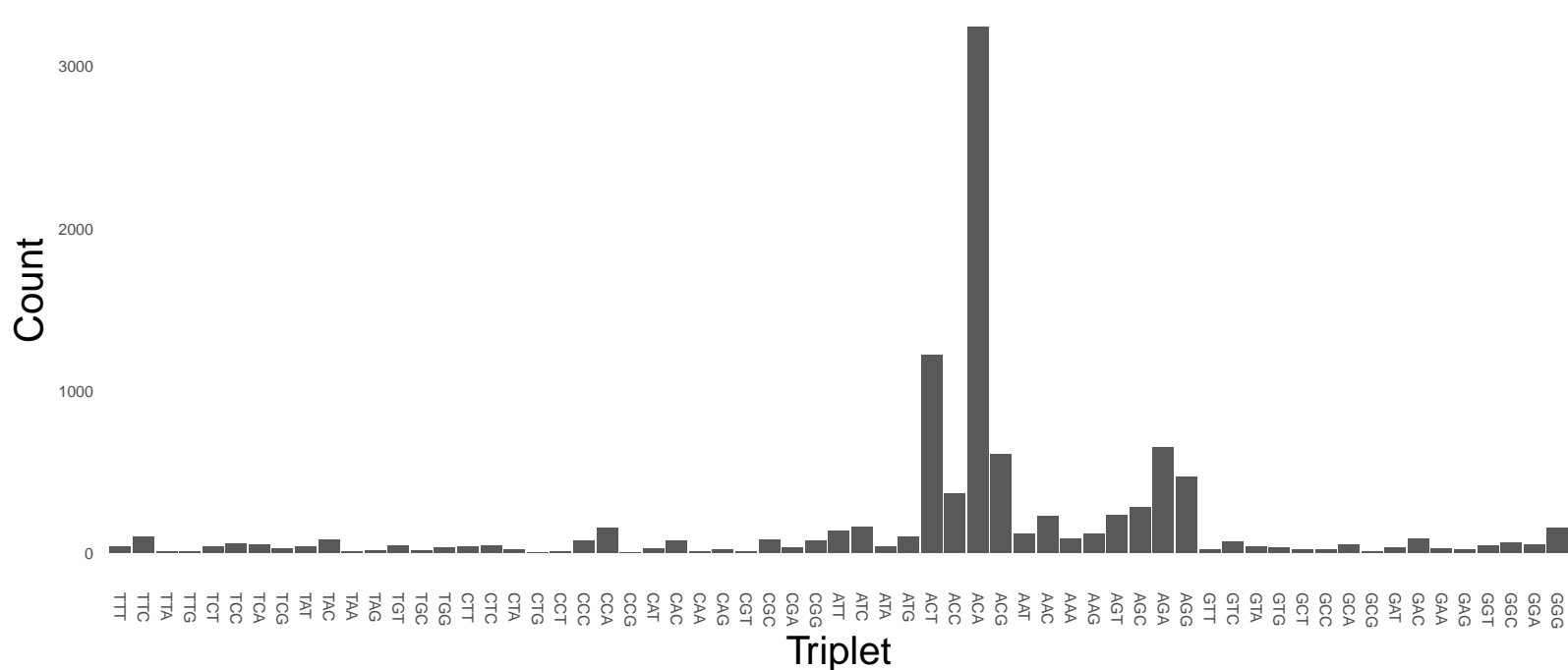
IGHV3-74\*01\_A315G- Final 3 nucleotides as a triplet



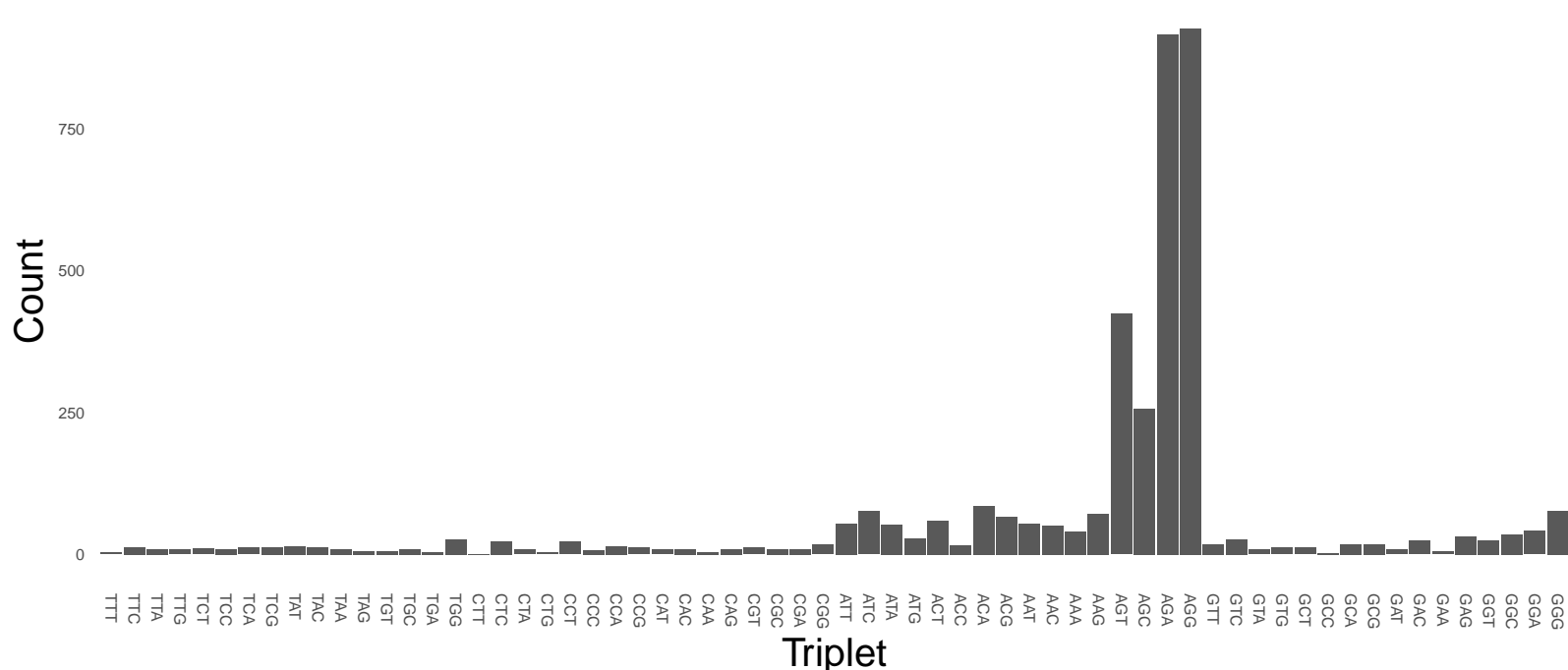
IGHV4-30-4\*08\_C315G- Final 3 nucleotides as a triplet



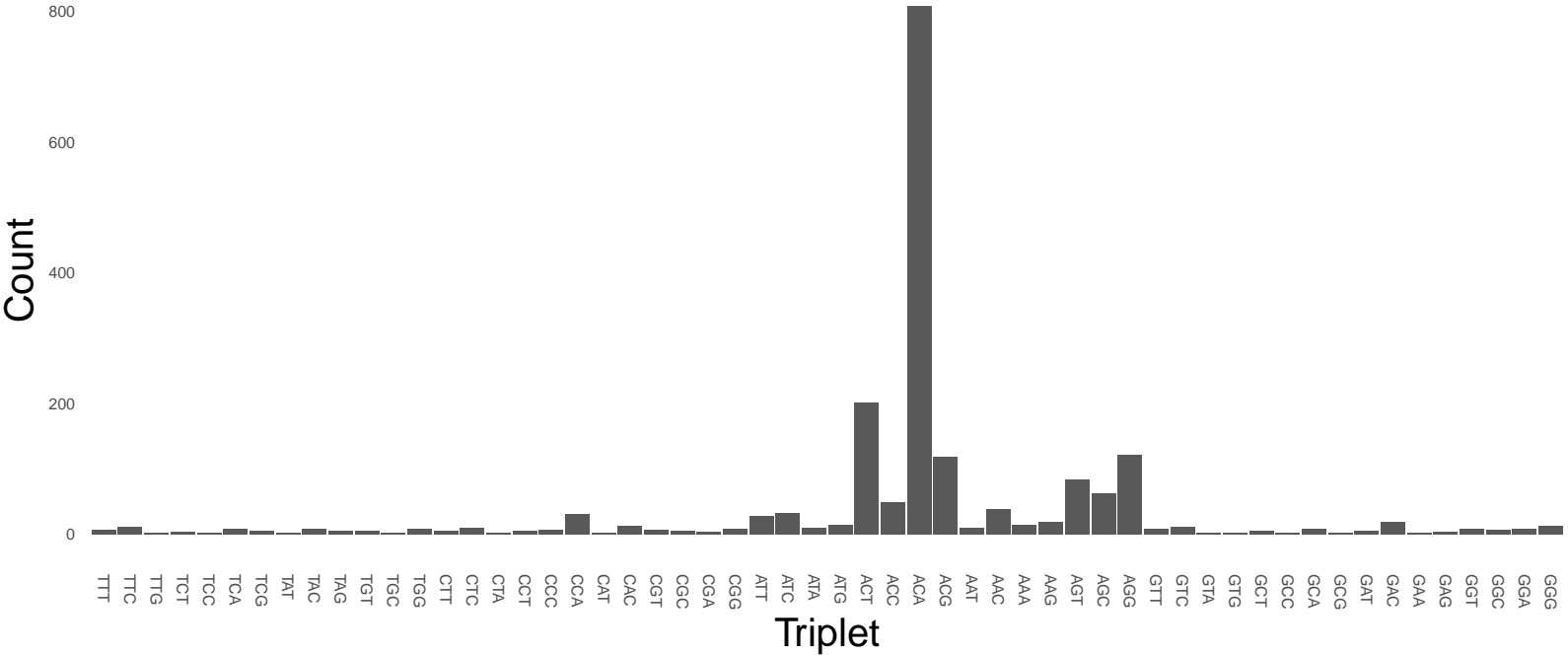
IGHV4-38-2\*02\_A70G- Final 3 nucleotides as a triplet



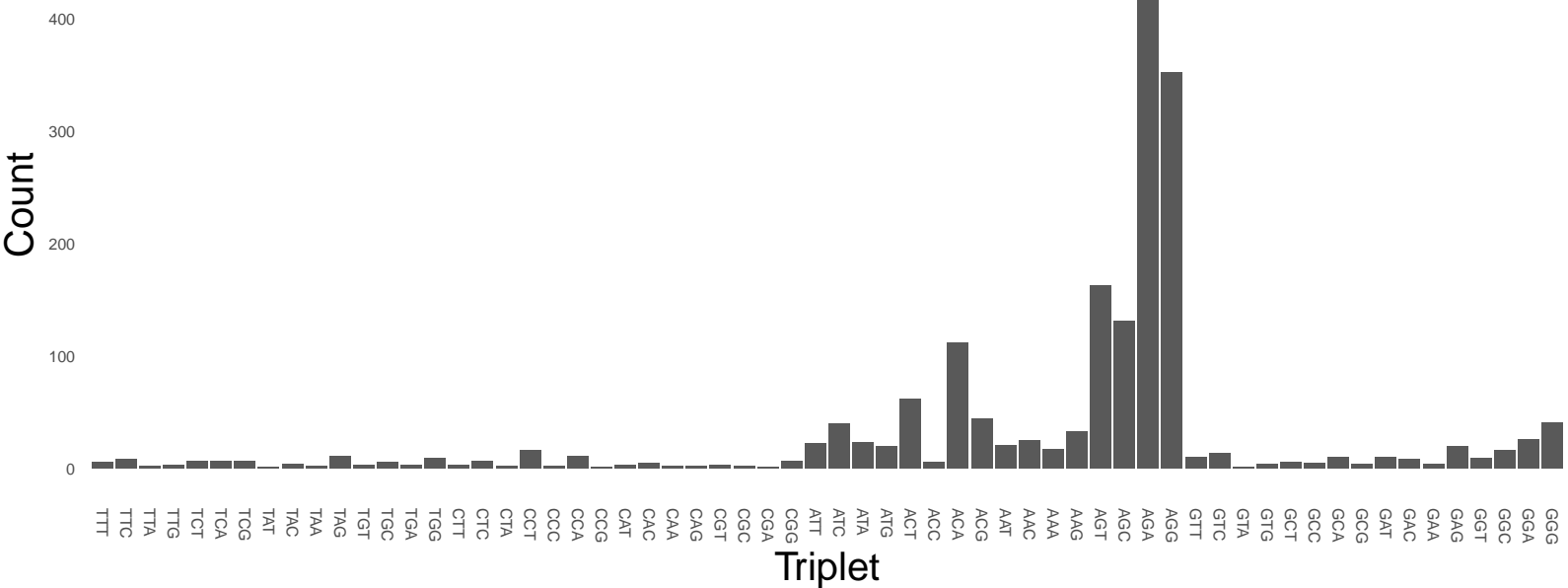
IGHV4-38-2\*02\_A70G\_A291G- Final 3 nucleotides as a triplet



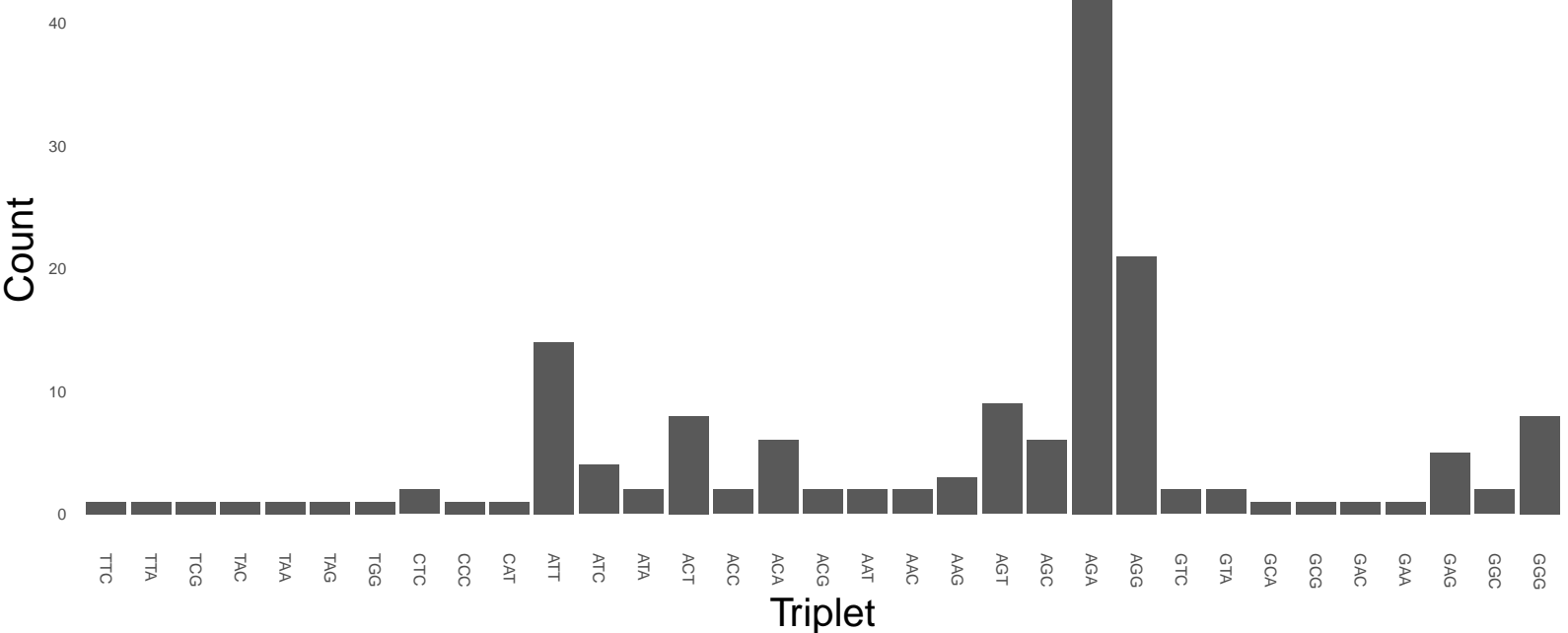
IGHV4-39\*01\_C237A\_T300C- Final 3 nucleotides as a triplet



IGHV4-61\*08\_G48A\_G49C\_G88A\_G107A\_G129C\_A147C\_T165C- Final 3 nucleotides as a triplet

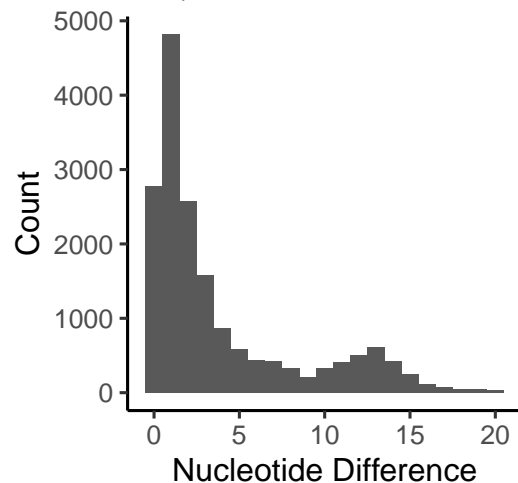


IGHV6-1\*01\_A315G- Final 3 nucleotides as a triplet



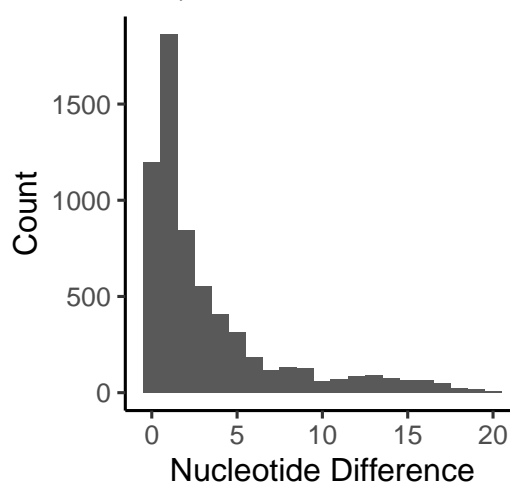
### IGHV1-2\*02

17650 sequences assigned  
2783 (15.8%) exact matches, in which:  
2379 unique CDR3  
7 unique J



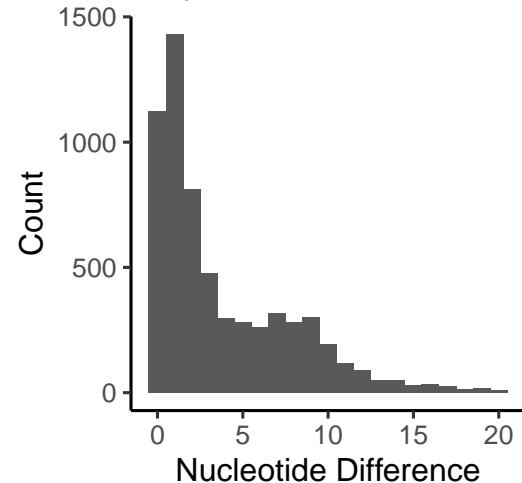
### IGHV1-3\*04

6442 sequences assigned  
1196 (18.6%) exact matches, in which:  
1044 unique CDR3  
7 unique J



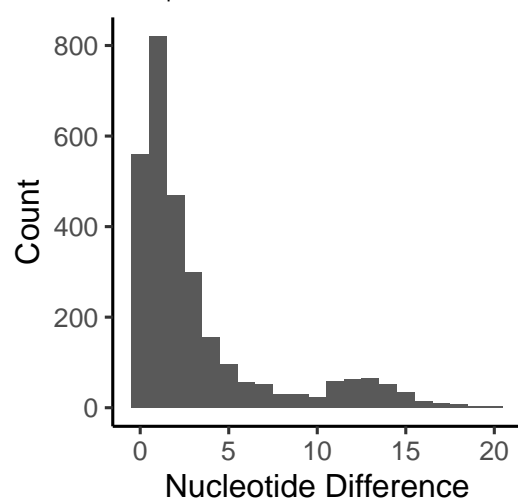
### IGHV1-8\*02

6253 sequences assigned  
1124 (18%) exact matches, in which:  
998 unique CDR3  
7 unique J



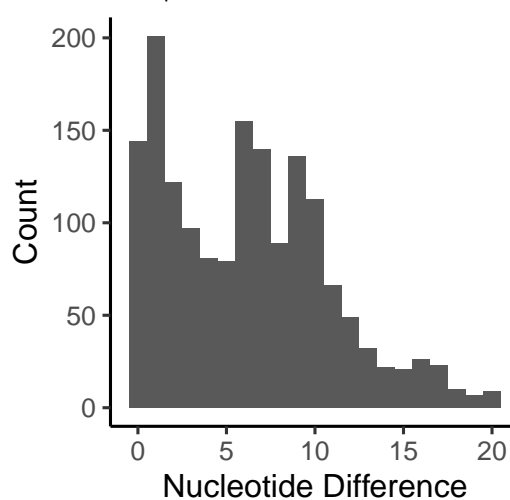
### IGHV1-2\*04

2935 sequences assigned  
561 (19.1%) exact matches, in which:  
489 unique CDR3  
7 unique J



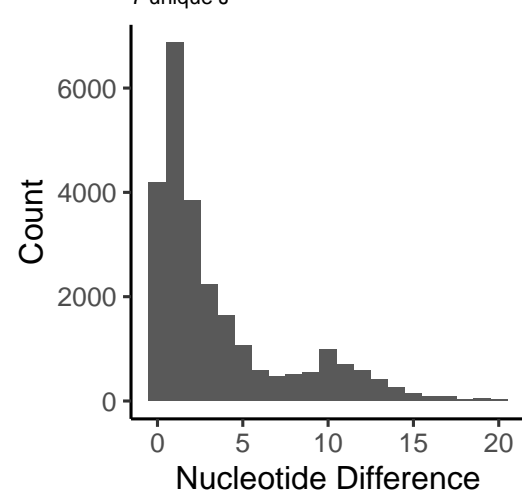
### IGHV1-3\*04\_A291G\_T3C

1650 sequences assigned  
144 (8.7%) exact matches, in which:  
144 unique CDR3  
7 unique J



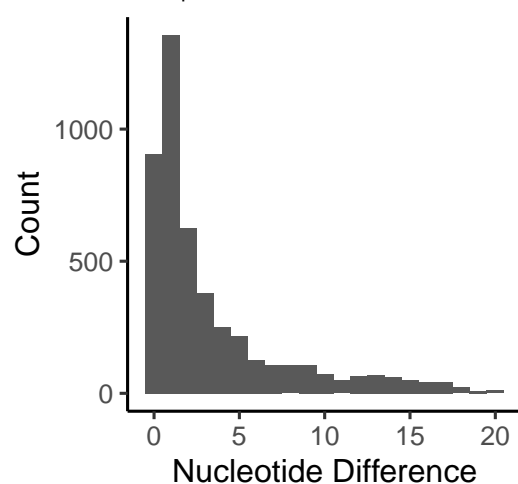
### IGHV1-18\*01

25592 sequences assigned  
4195 (16.4%) exact matches, in which:  
3549 unique CDR3  
7 unique J



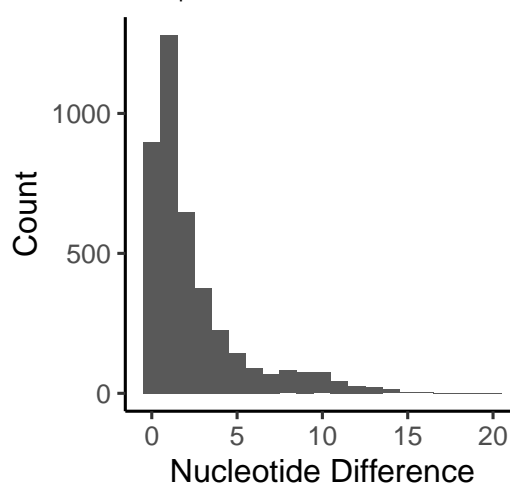
### IGHV1-3\*01

4742 sequences assigned  
906 (19.1%) exact matches, in which:  
797 unique CDR3  
7 unique J



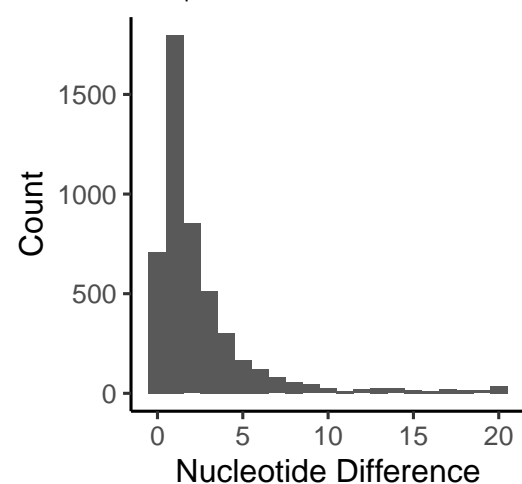
### IGHV1-8\*01

4095 sequences assigned  
897 (21.9%) exact matches, in which:  
783 unique CDR3  
7 unique J



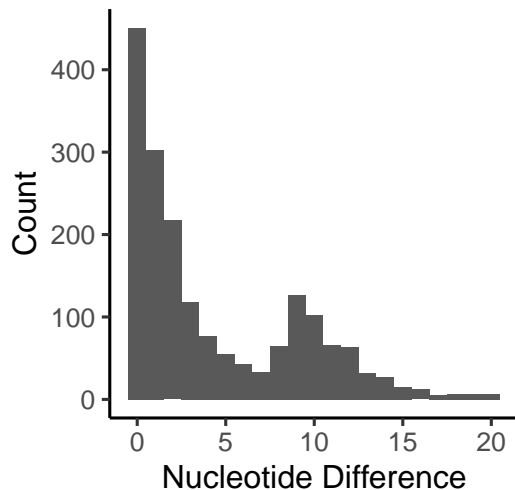
### IGHV1-24\*01

5097 sequences assigned  
710 (13.9%) exact matches, in which:  
528 unique CDR3  
7 unique J



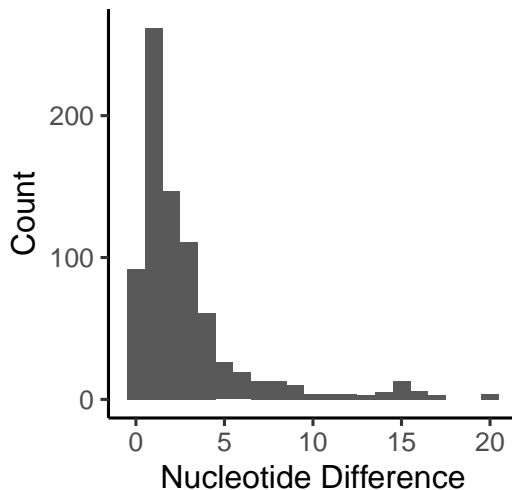
### IGHV1-24\*01\_A315G\_C:

1908 sequences assigned  
451 (23.6%) exact matches, in which:  
447 unique CDR3  
7 unique J



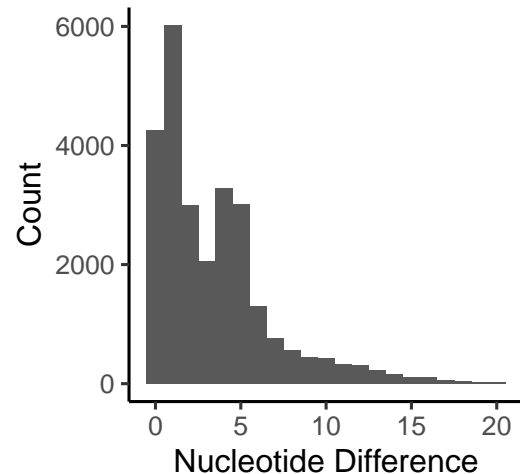
### IGHV1-58\*02

806 sequences assigned  
92 (11.4%) exact matches, in which:  
63 unique CDR3  
6 unique J



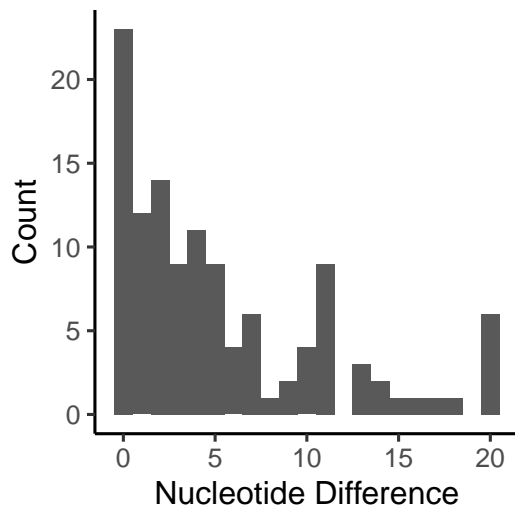
### IGHV1-69\*11

26757 sequences assigned  
4263 (15.9%) exact matches, in which:  
3679 unique CDR3  
7 unique J



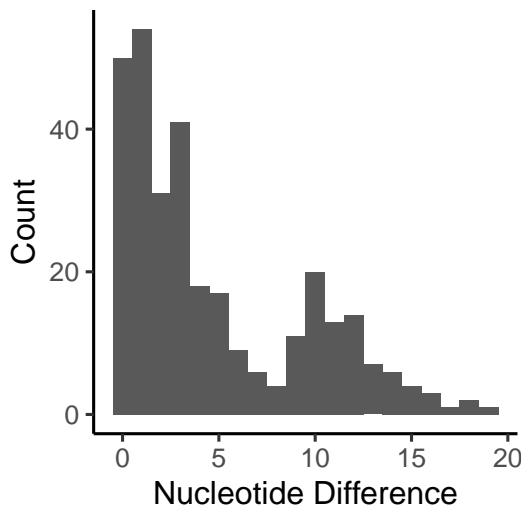
### IGHV1-45\*02

131 sequences assigned  
23 (17.6%) exact matches, in which:  
20 unique CDR3  
5 unique J



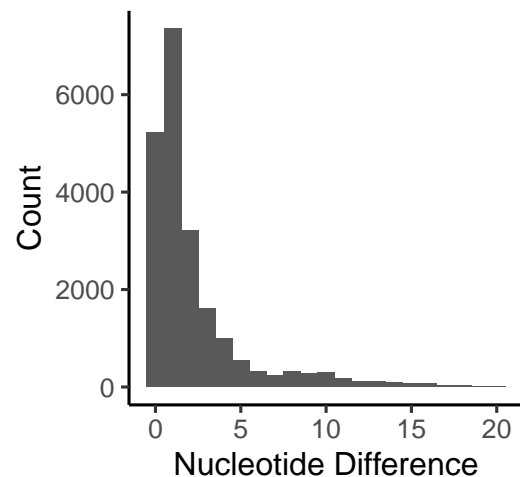
### IGHV1-58\*02\_G316A\_C3

315 sequences assigned  
50 (15.9%) exact matches, in which:  
50 unique CDR3  
7 unique J



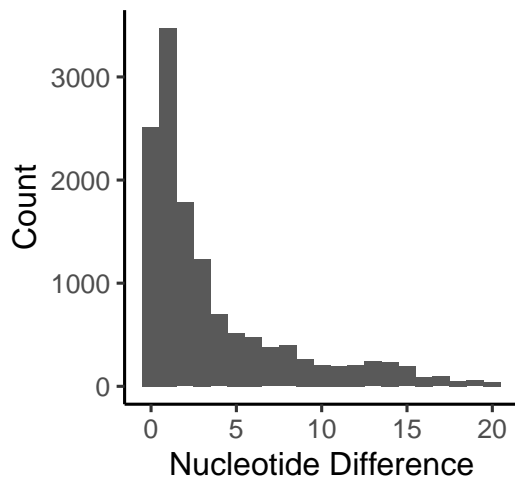
### IGHV1-69\*12

21289 sequences assigned  
5215 (24.5%) exact matches, in which:  
4490 unique CDR3  
7 unique J



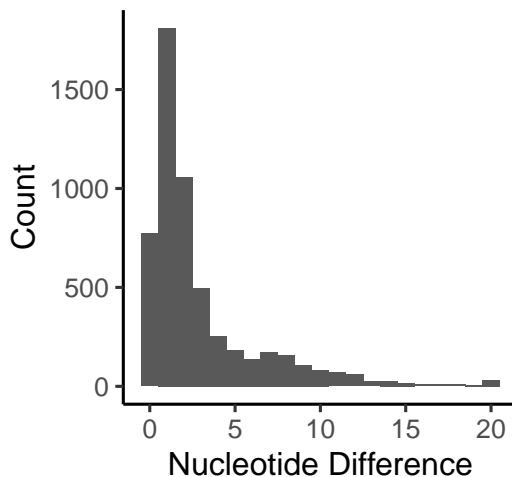
### IGHV1-46\*01

13518 sequences assigned  
2512 (18.6%) exact matches, in which:  
2150 unique CDR3  
7 unique J



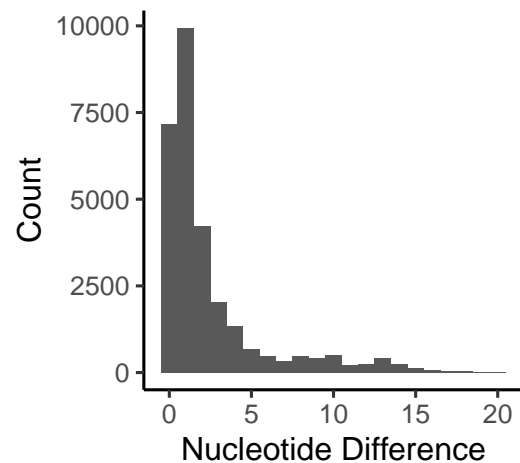
### IGHV1-69-2\*01

5786 sequences assigned  
772 (13.3%) exact matches, in which:  
598 unique CDR3  
7 unique J



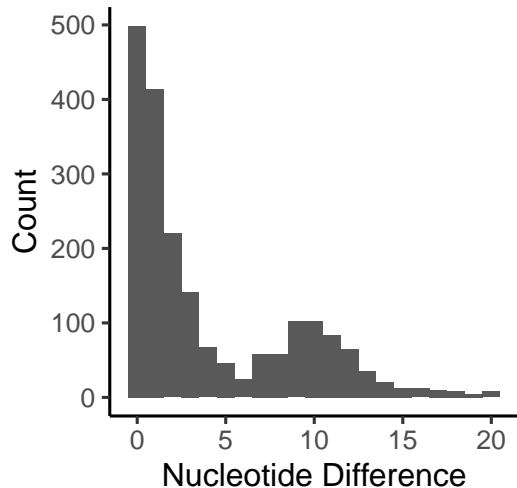
### IGHV1-69\*18

29171 sequences assigned  
7155 (24.5%) exact matches, in which:  
5963 unique CDR3  
7 unique J



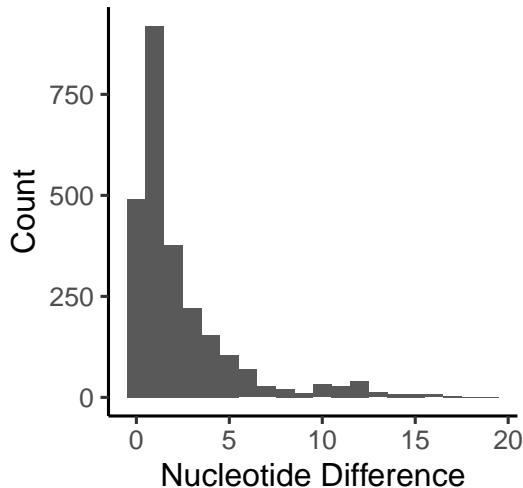
### IGHV1-69-2\*01\_A315G\_

2102 sequences assigned  
499 (23.7%) exact matches, in which:  
496 unique CDR3  
7 unique J



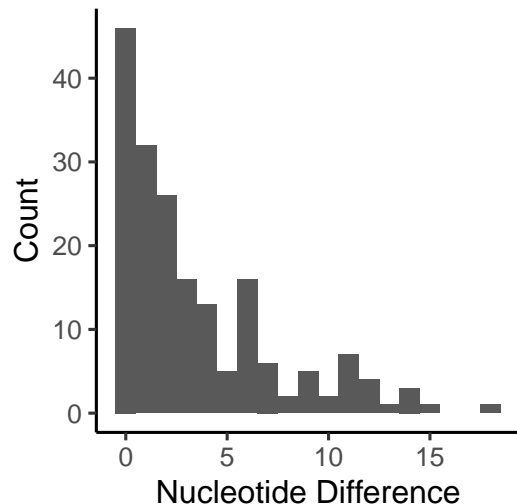
### IGHV2-26\*01

2636 sequences assigned  
492 (18.7%) exact matches, in which:  
407 unique CDR3  
7 unique J



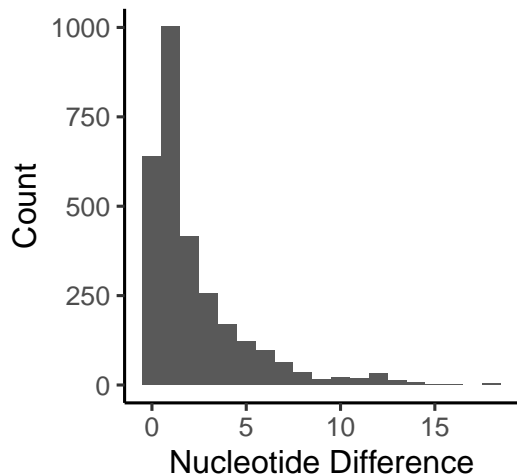
### IGHV2-70\*15\_G303A

189 sequences assigned  
46 (24.3%) exact matches, in which:  
46 unique CDR3  
6 unique J



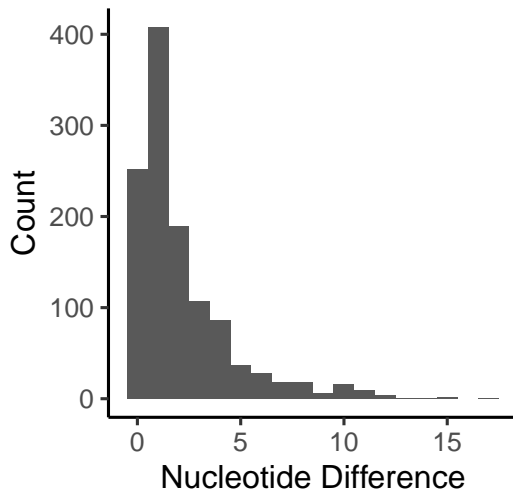
### IGHV2-5\*01

2957 sequences assigned  
638 (21.6%) exact matches, in which:  
544 unique CDR3  
7 unique J



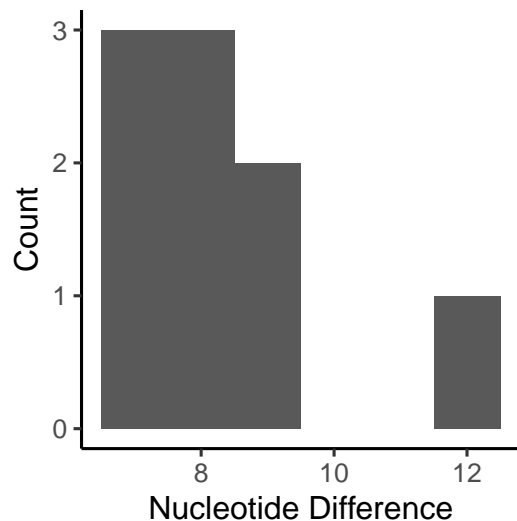
### IGHV2-70\*15

1237 sequences assigned  
252 (20.4%) exact matches, in which:  
215 unique CDR3  
6 unique J



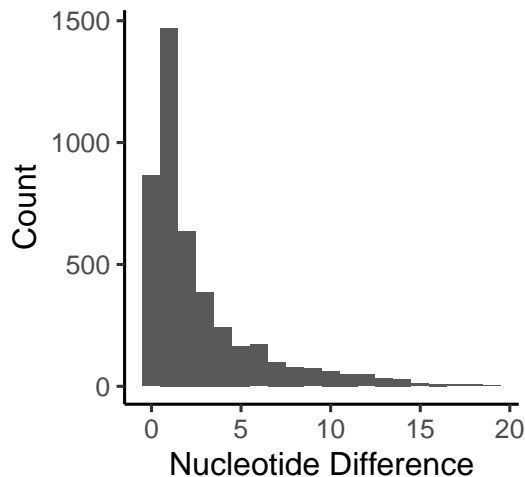
### IGHV2-70D\*14

9 sequences assigned  
No exact matches.



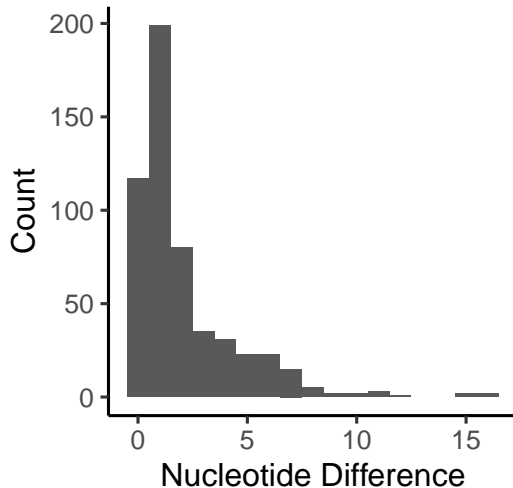
### IGHV2-5\*02

4535 sequences assigned  
865 (19.1%) exact matches, in which:  
724 unique CDR3  
7 unique J



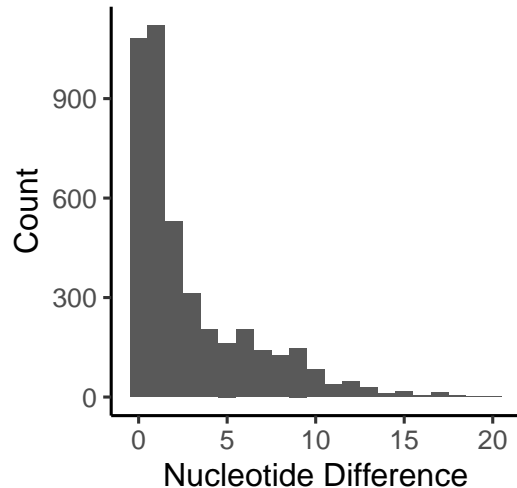
### IGHV2-70\*04\_C6T

568 sequences assigned  
117 (20.6%) exact matches, in which:  
101 unique CDR3  
7 unique J



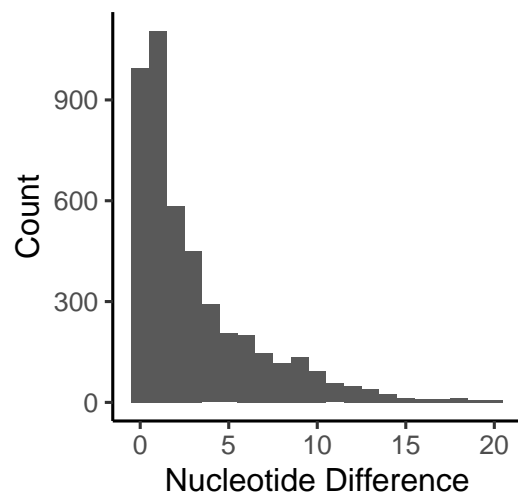
### IGHV3-7\*01

4333 sequences assigned  
1082 (25%) exact matches, in which:  
967 unique CDR3  
7 unique J



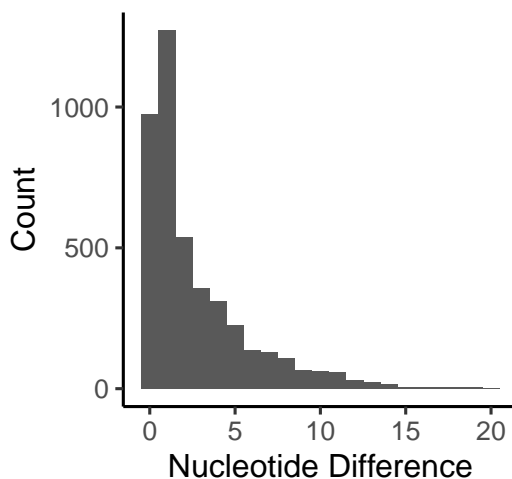
### IGHV3-7\*03

4607 sequences assigned  
994 (21.6%) exact matches, in which:  
852 unique CDR3  
7 unique J



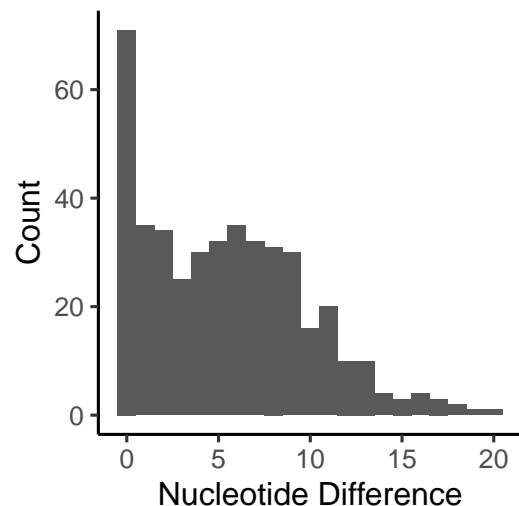
### IGHV3-11\*01

4409 sequences assigned  
974 (22.1%) exact matches, in which:  
795 unique CDR3  
7 unique J



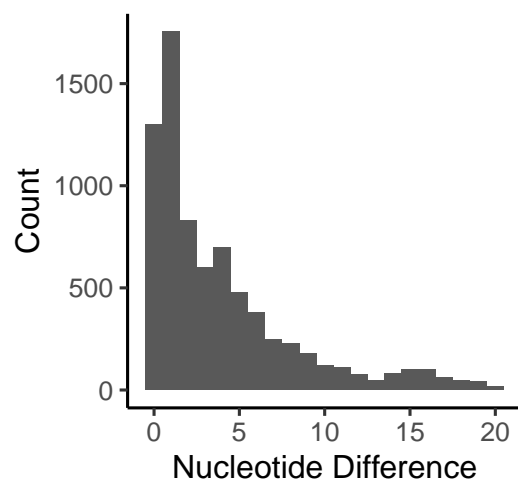
### IGHV3-13\*01\_A315G

433 sequences assigned  
71 (16.4%) exact matches, in which:  
71 unique CDR3  
6 unique J



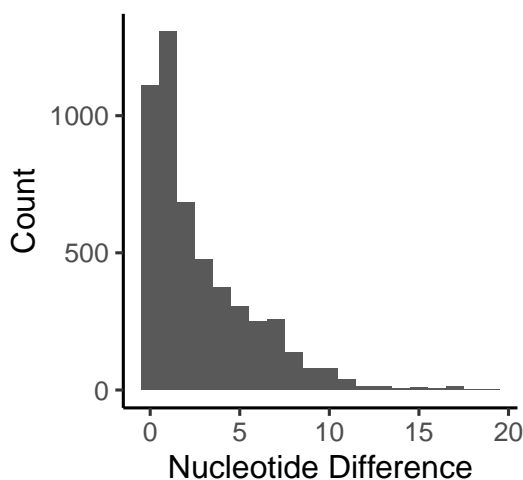
### IGHV3-9\*01

7597 sequences assigned  
1300 (17.1%) exact matches, in which:  
1035 unique CDR3  
7 unique J



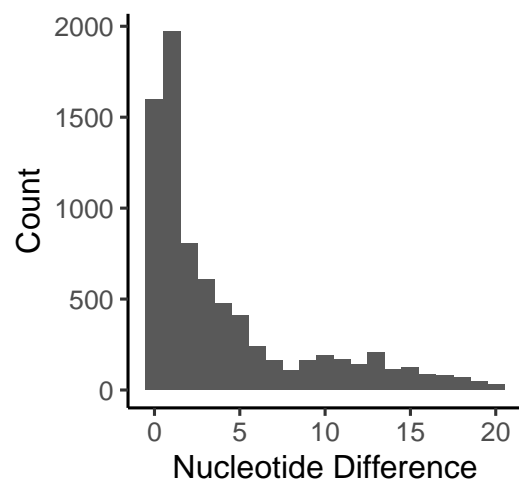
### IGHV3-11\*04

5296 sequences assigned  
1109 (20.9%) exact matches, in which:  
914 unique CDR3  
7 unique J



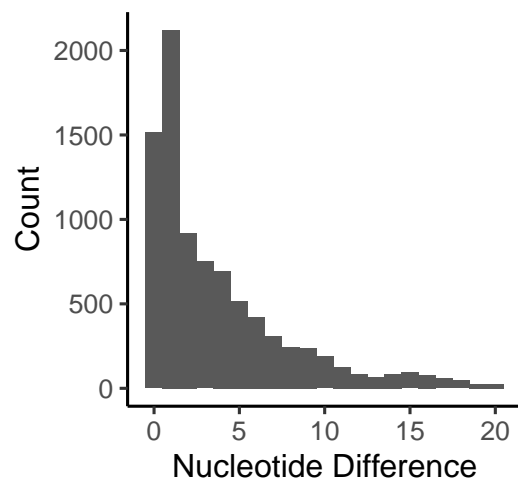
### IGHV3-15\*01

7975 sequences assigned  
1597 (20%) exact matches, in which:  
1304 unique CDR3  
7 unique J



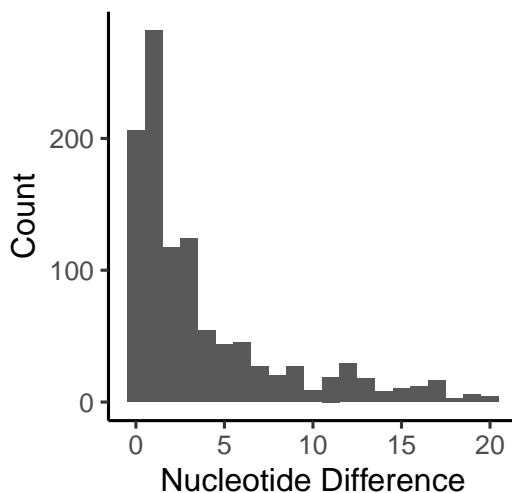
### IGHV3-9\*01\_T194C\_C1

8702 sequences assigned  
1514 (17.4%) exact matches, in which:  
1224 unique CDR3  
7 unique J



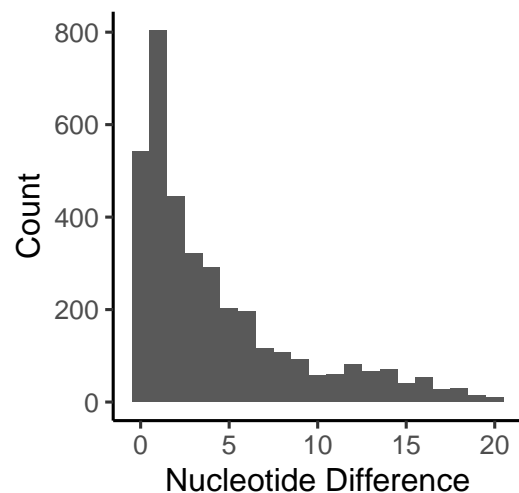
### IGHV3-13\*01

1094 sequences assigned  
206 (18.8%) exact matches, in which:  
164 unique CDR3  
6 unique J



### IGHV3-20\*04

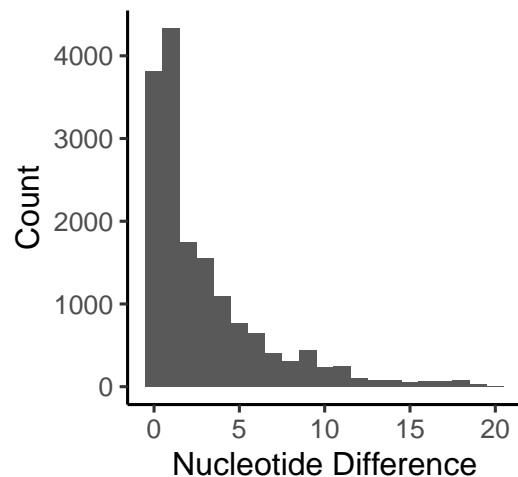
3684 sequences assigned  
541 (14.7%) exact matches, in which:  
445 unique CDR3  
7 unique J





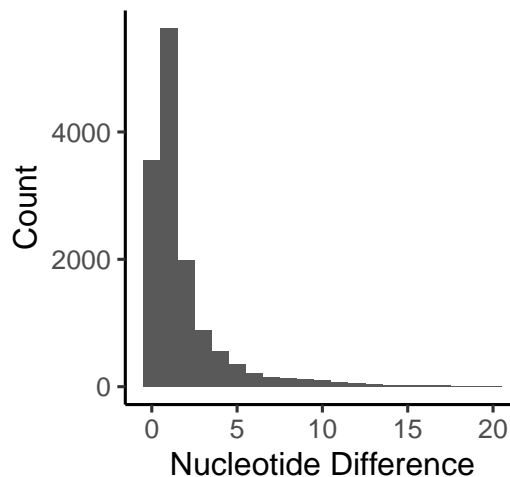
### IGHV3-21\*01

16339 sequences assigned  
3814 (23.3%) exact matches, in which:  
3132 unique CDR3  
7 unique J



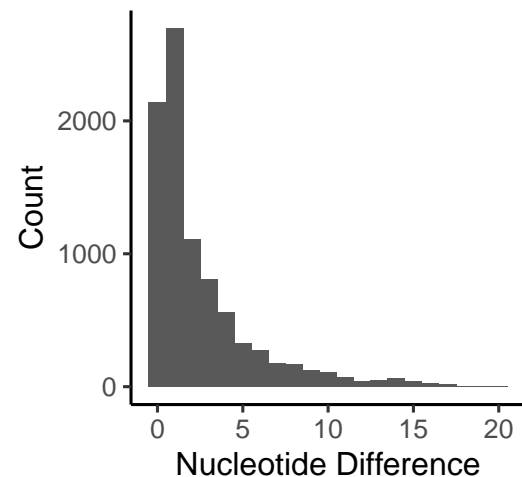
### IGHV3-23\*01

14012 sequences assigned  
3559 (25.4%) exact matches, in which:  
2835 unique CDR3  
7 unique J



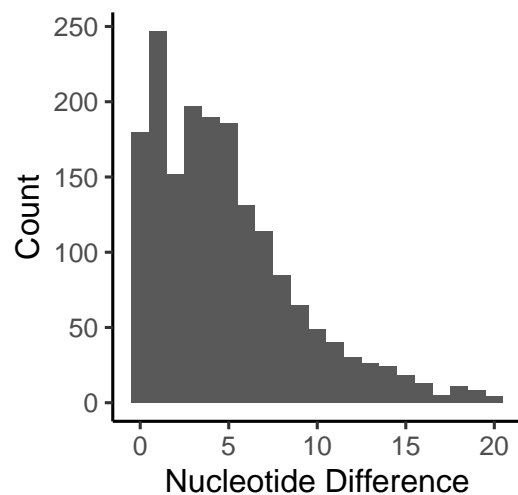
### IGHV3-30-3\*01

8936 sequences assigned  
2143 (24%) exact matches, in which:  
1745 unique CDR3  
7 unique J



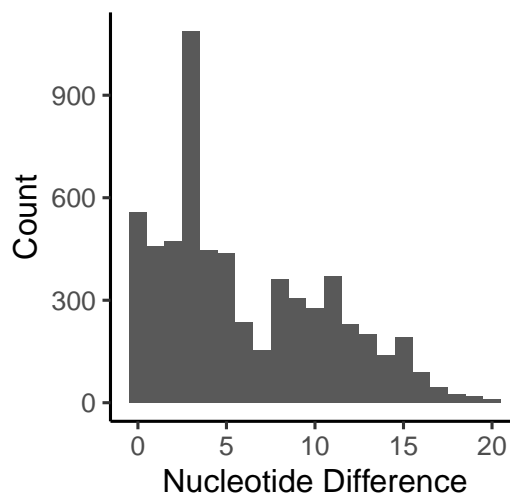
### IGHV3-21\*04

1795 sequences assigned  
180 (10%) exact matches, in which:  
176 unique CDR3  
7 unique J



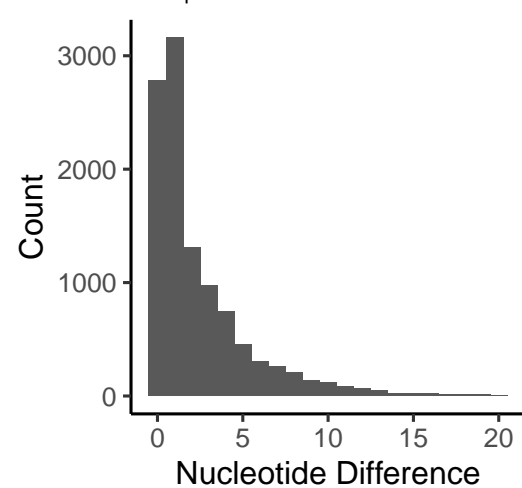
### IGHV3-23\*04

6327 sequences assigned  
558 (8.8%) exact matches, in which:  
510 unique CDR3  
7 unique J



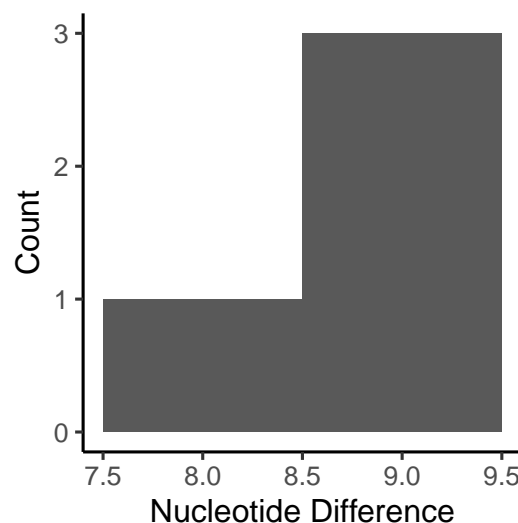
### IGHV3-30\*01

10880 sequences assigned  
2781 (25.6%) exact matches, in which:  
2372 unique CDR3  
7 unique J



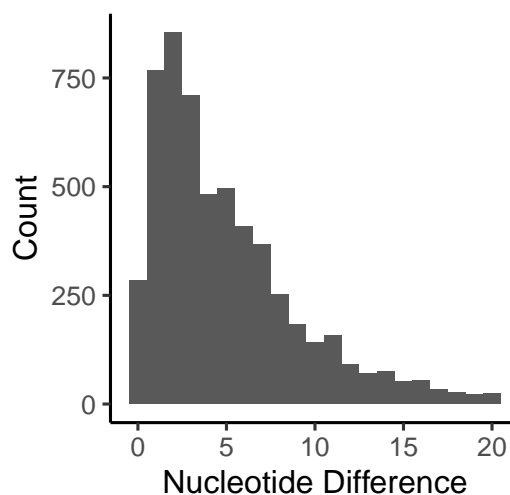
### IGHV3-22\*02

4 sequences assigned  
No exact matches.



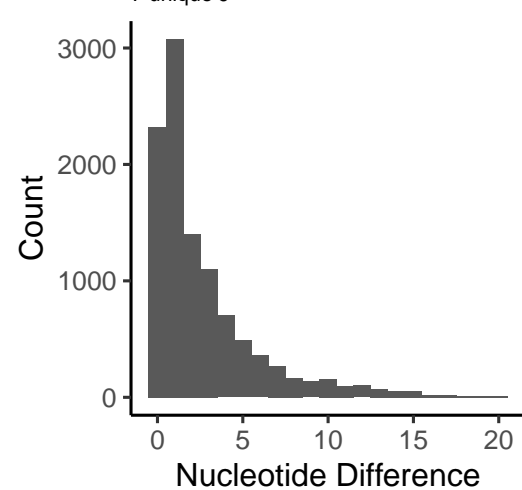
### IGHV3-23\*01\_A303G\_A303G

5647 sequences assigned  
285 (5%) exact matches, in which:  
282 unique CDR3  
7 unique J



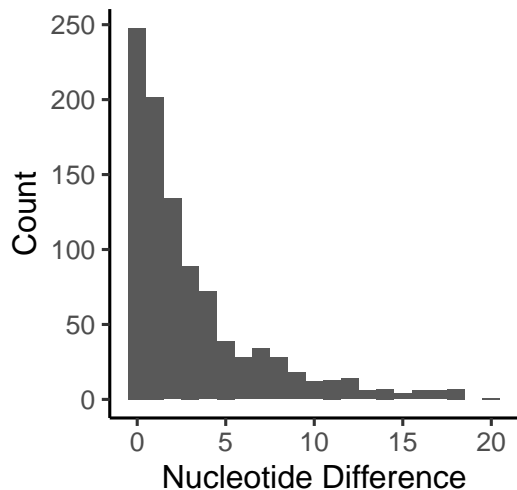
### IGHV3-30\*02

10730 sequences assigned  
2320 (21.6%) exact matches, in which:  
1899 unique CDR3  
7 unique J



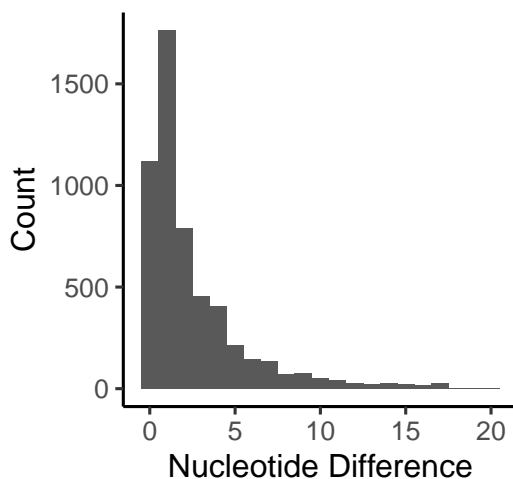
### IGHV3-30-3\*02\_G75C

980 sequences assigned  
248 (25.3%) exact matches, in which:  
237 unique CDR3  
7 unique J



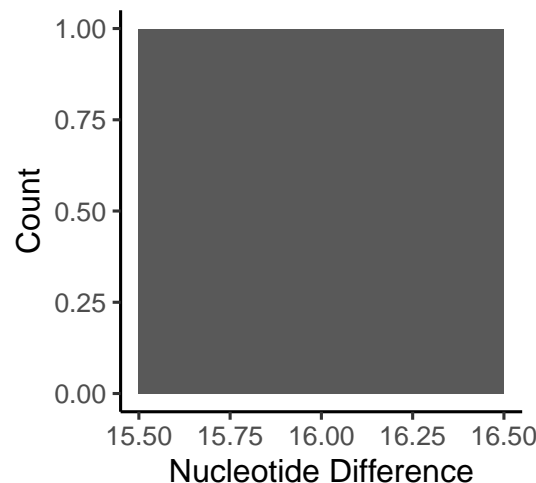
### IGHV3-33\*06

5459 sequences assigned  
1122 (20.6%) exact matches, in which:  
873 unique CDR3  
7 unique J



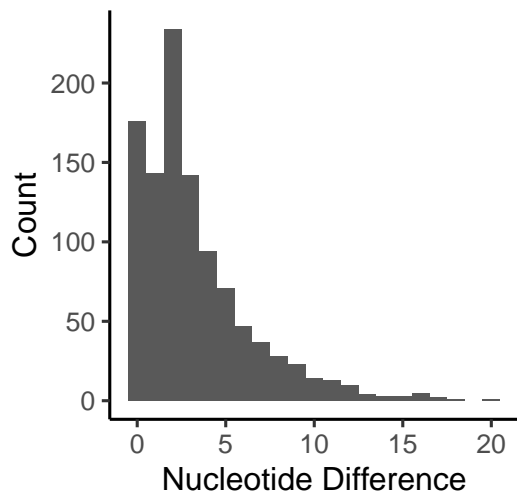
### IGHV3-47\*02

1 sequences assigned  
No exact matches.



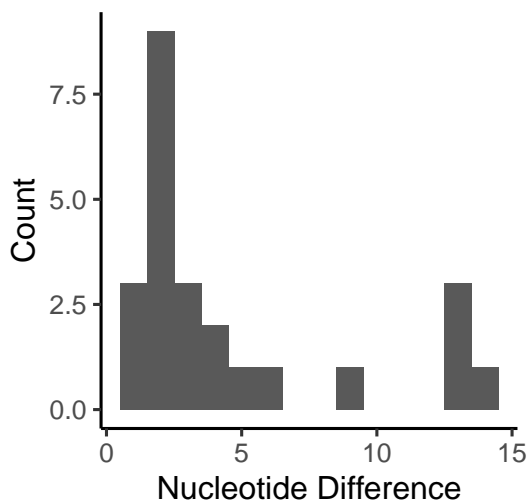
### IGHV3-30-3\*02\_G75C\_1

1064 sequences assigned  
176 (16.5%) exact matches, in which:  
171 unique CDR3  
7 unique J



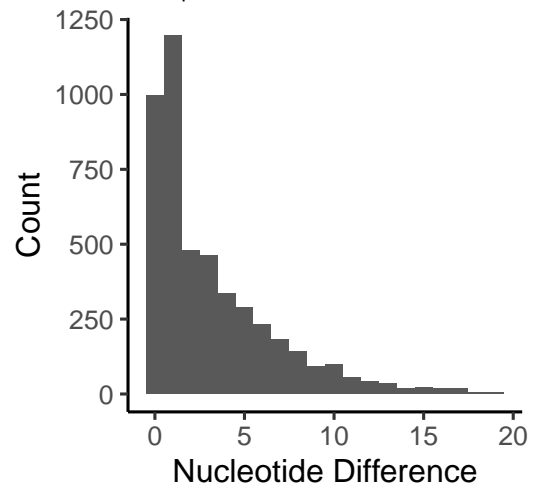
### IGHV3-35\*01

24 sequences assigned  
No exact matches.



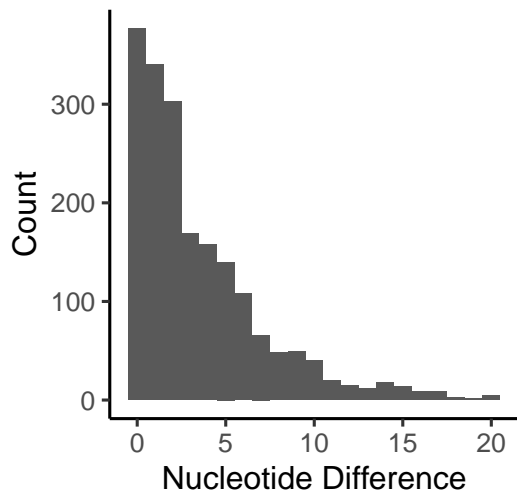
### IGHV3-48\*01

4756 sequences assigned  
998 (21%) exact matches, in which:  
834 unique CDR3  
7 unique J



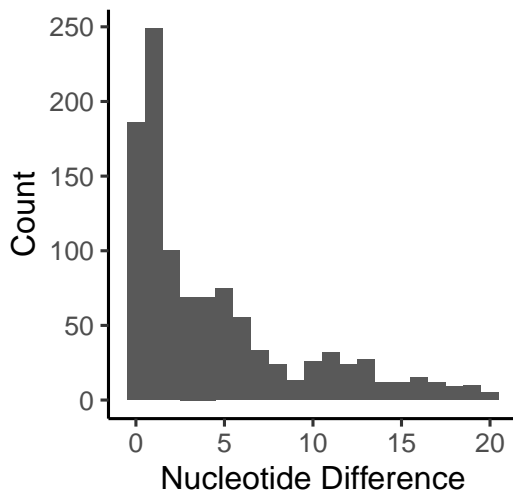
### IGHV3-33\*01

1921 sequences assigned  
377 (19.6%) exact matches, in which:  
370 unique CDR3  
7 unique J



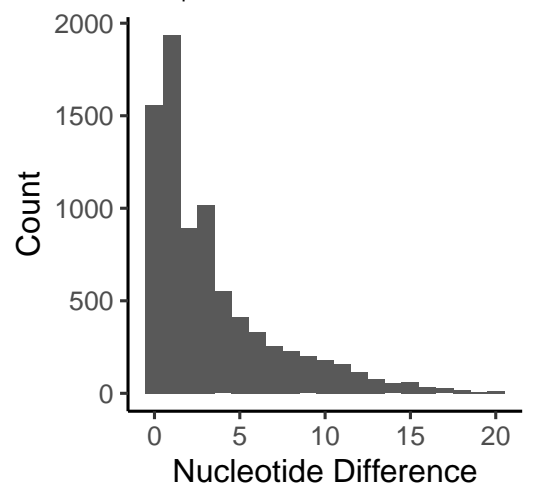
### IGHV3-43\*01

1069 sequences assigned  
186 (17.4%) exact matches, in which:  
159 unique CDR3  
6 unique J



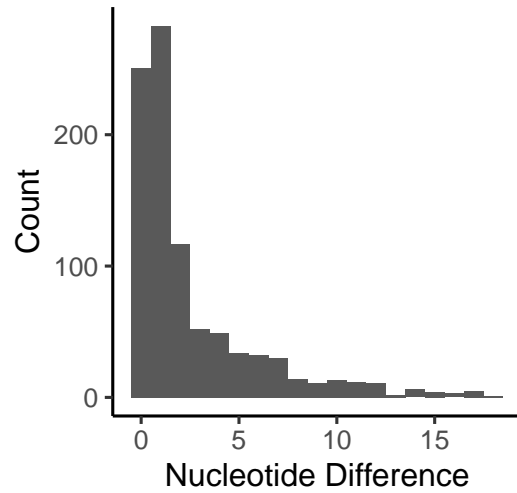
### IGHV3-48\*04

8204 sequences assigned  
1558 (19%) exact matches, in which:  
1332 unique CDR3  
7 unique J



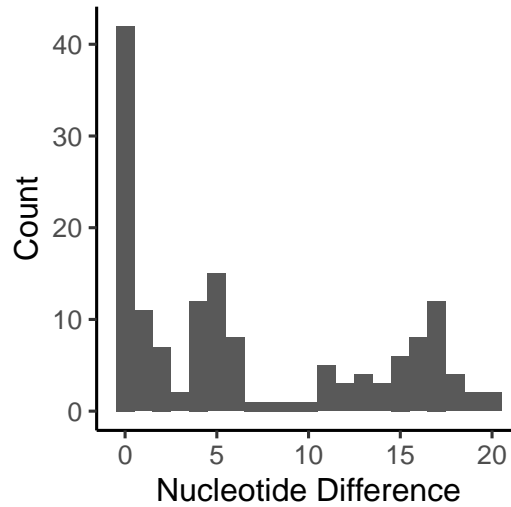
### IGHV3-49\*03

942 sequences assigned  
251 (26.6%) exact matches, in which:  
205 unique CDR3  
7 unique J



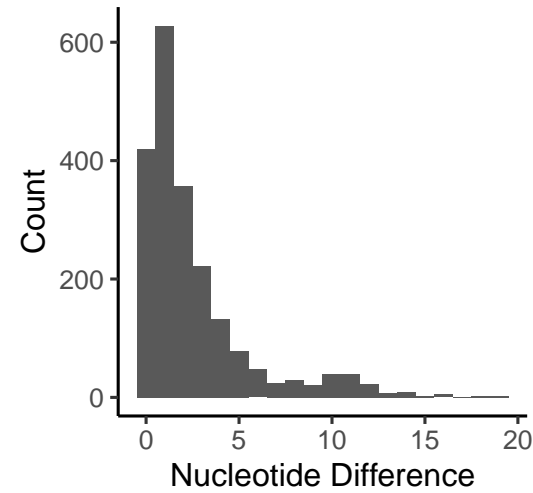
### IGHV3-49\*04\_A313G\_T3'

152 sequences assigned  
42 (27.6%) exact matches, in which:  
41 unique CDR3  
5 unique J



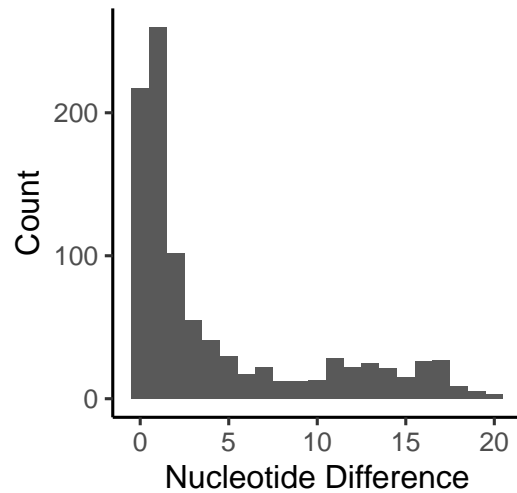
### IGHV3-53\*04

2121 sequences assigned  
420 (19.8%) exact matches, in which:  
322 unique CDR3  
7 unique J



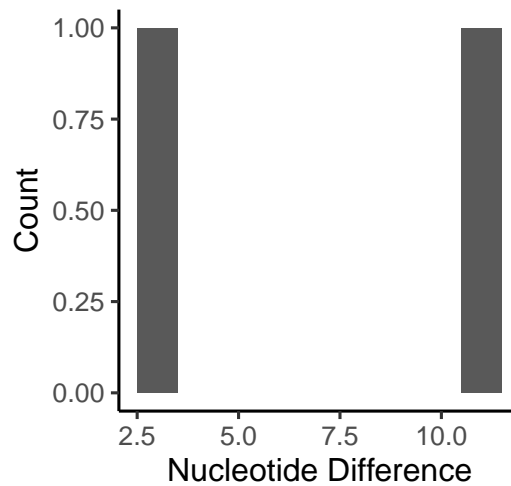
### IGHV3-49\*04

981 sequences assigned  
217 (22.1%) exact matches, in which:  
178 unique CDR3  
7 unique J



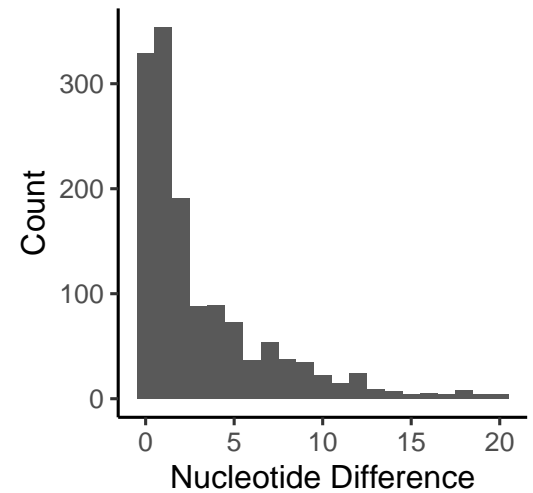
### IGHV3-52\*01

2 sequences assigned  
No exact matches.



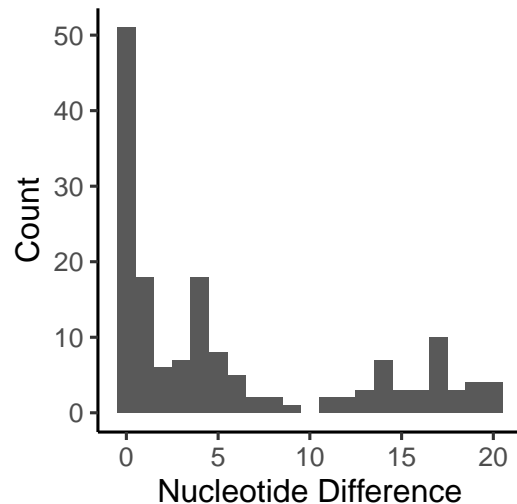
### IGHV3-64\*01

1422 sequences assigned  
329 (23.1%) exact matches, in which:  
270 unique CDR3  
7 unique J



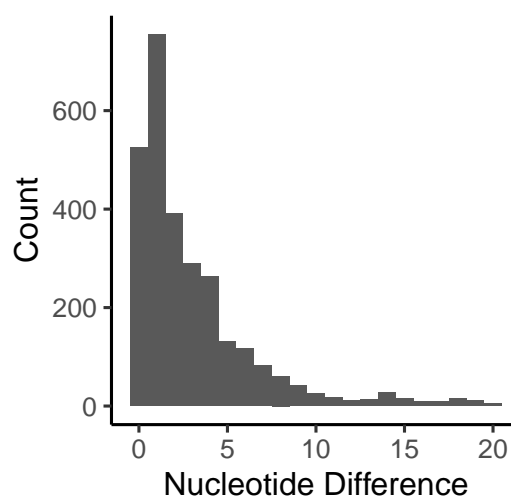
### IGHV3-49\*03\_A313G\_T3'

162 sequences assigned  
51 (31.5%) exact matches, in which:  
51 unique CDR3  
7 unique J



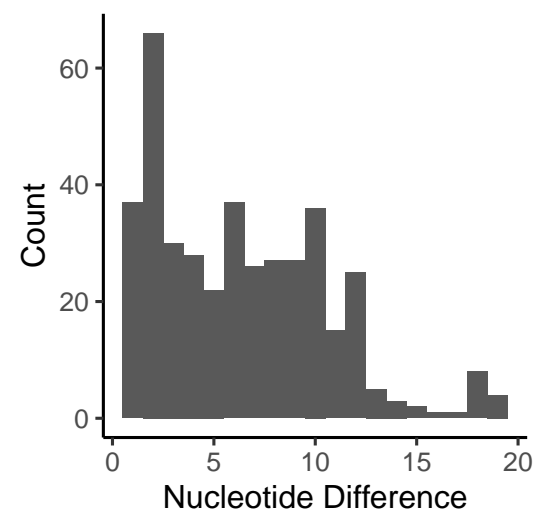
### IGHV3-53\*01

2847 sequences assigned  
525 (18.4%) exact matches, in which:  
420 unique CDR3  
7 unique J



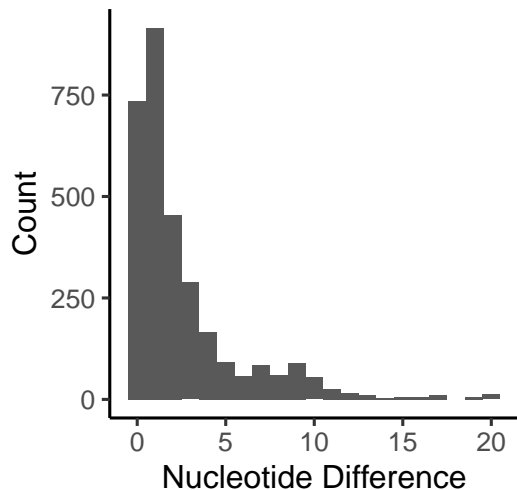
### IGHV3-66\*01

420 sequences assigned  
No exact matches.



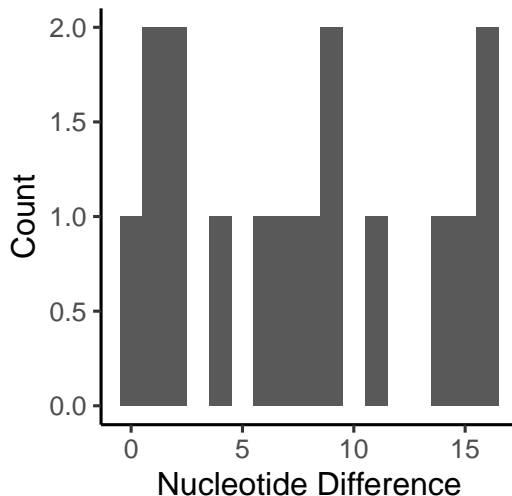
### IGHV3-66\*02

3135 sequences assigned  
736 (23.5%) exact matches, in which:  
590 unique CDR3  
7 unique J



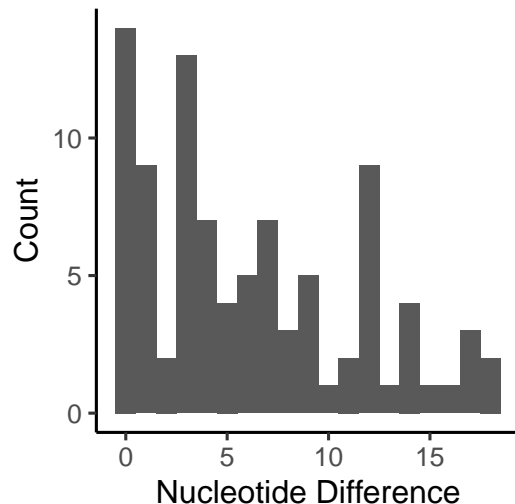
### IGHV3-69-1\*01

18 sequences assigned  
1 (5.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



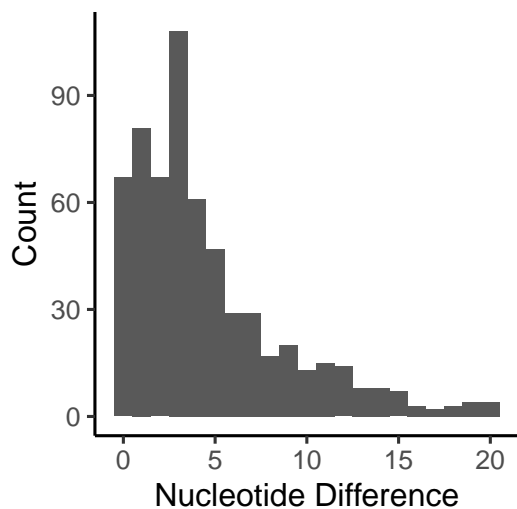
### IGHV3-72\*01\_T315G

96 sequences assigned  
14 (14.6%) exact matches, in which:  
14 unique CDR3  
4 unique J



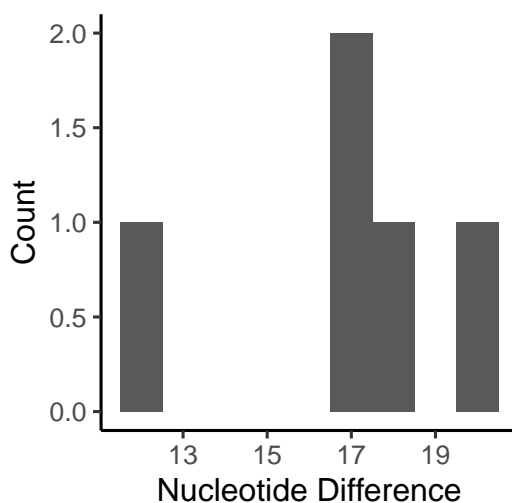
### IGHV3-66\*01\_A223C\_T26G

621 sequences assigned  
67 (10.8%) exact matches, in which:  
67 unique CDR3  
7 unique J



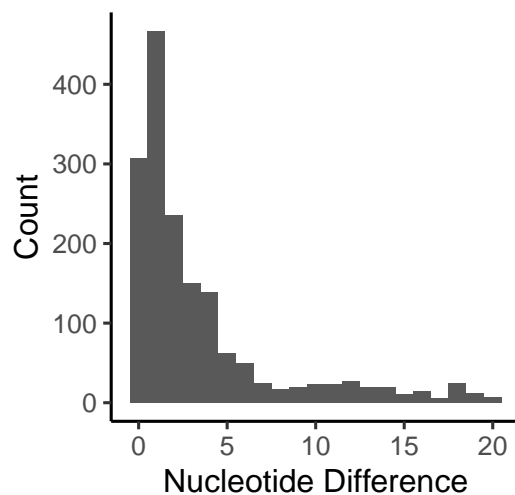
### IGHV3-71\*04

8 sequences assigned  
No exact matches.



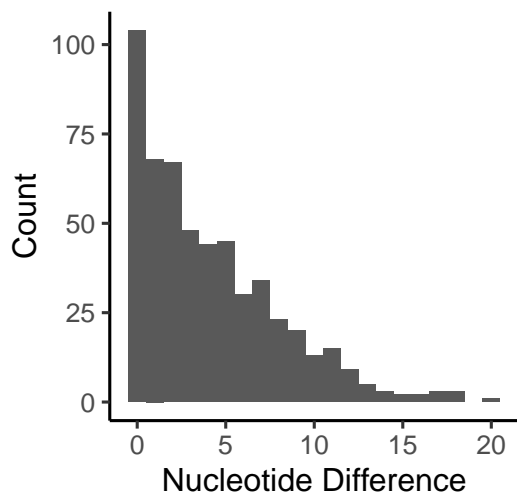
### IGHV3-73\*01

1687 sequences assigned  
307 (18.2%) exact matches, in which:  
245 unique CDR3  
6 unique J



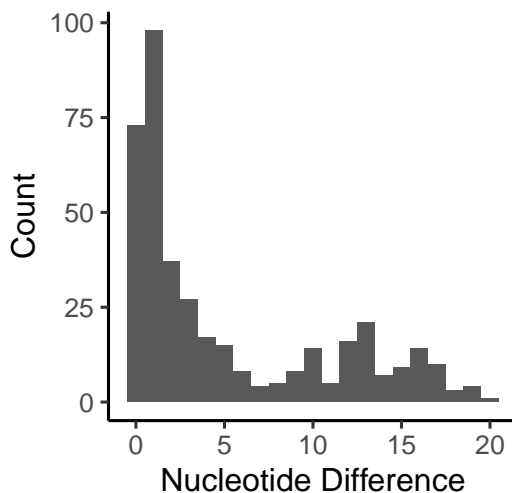
### IGHV3-66\*02\_T267G

547 sequences assigned  
104 (19%) exact matches, in which:  
104 unique CDR3  
7 unique J



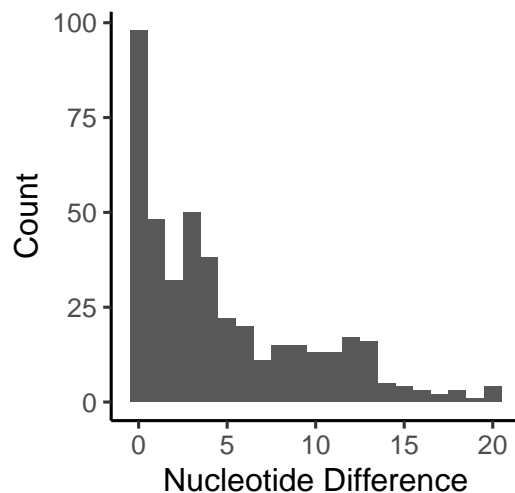
### IGHV3-72\*01

414 sequences assigned  
73 (17.6%) exact matches, in which:  
55 unique CDR3  
6 unique J



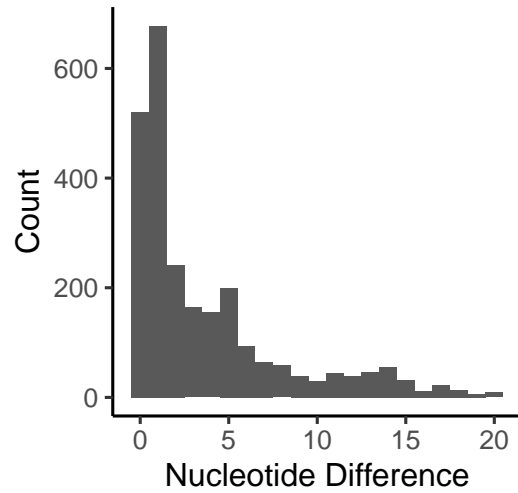
### IGHV3-73\*01\_A313G\_T315G

446 sequences assigned  
98 (22%) exact matches, in which:  
98 unique CDR3  
7 unique J



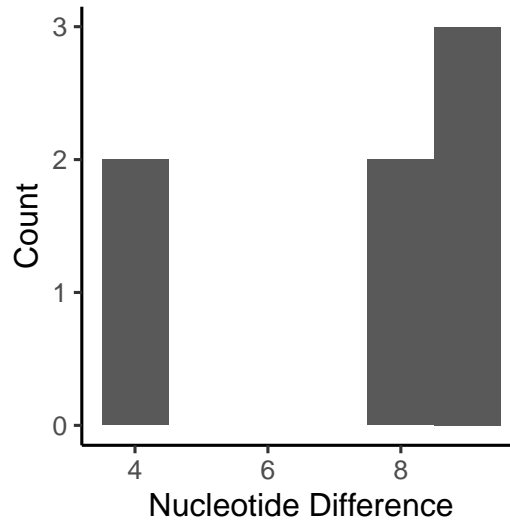
### IGHV3-74\*01

2552 sequences assigned  
520 (20.4%) exact matches, in which:  
435 unique CDR3  
7 unique J



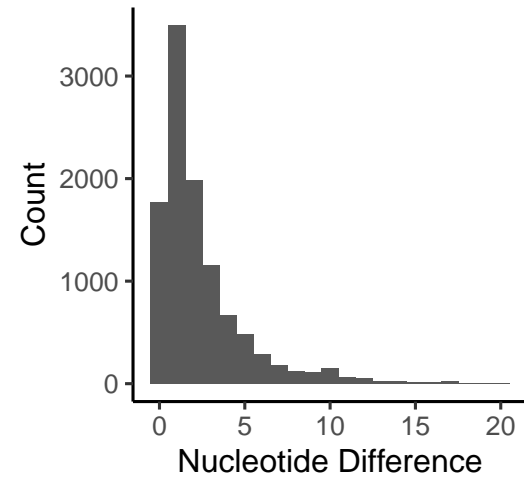
### IGHV3-64D\*06

7 sequences assigned  
No exact matches.



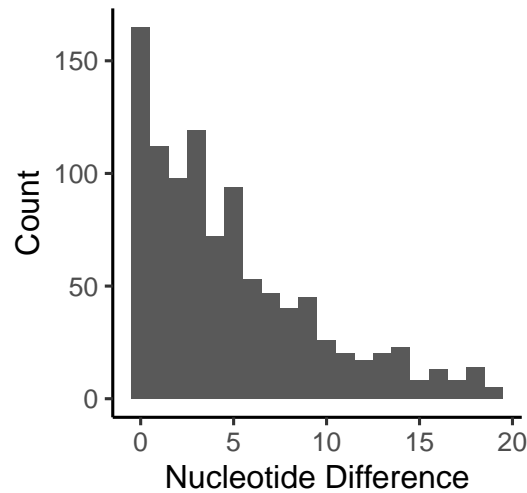
### IGHV4-4\*09

10683 sequences assigned  
1766 (16.5%) exact matches, in which:  
1471 unique CDR3  
7 unique J



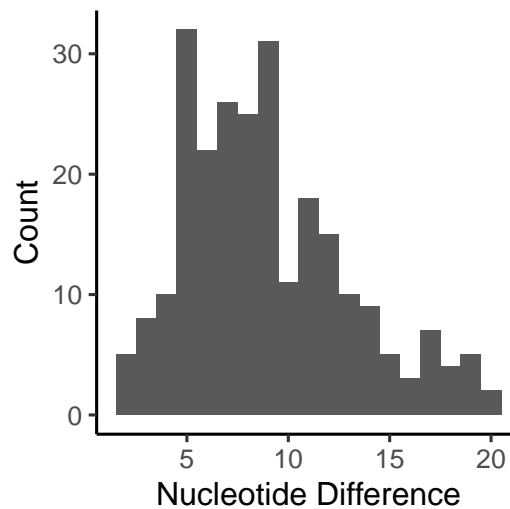
### IGHV3-74\*01\_A315G

1011 sequences assigned  
165 (16.3%) exact matches, in which:  
164 unique CDR3  
7 unique J



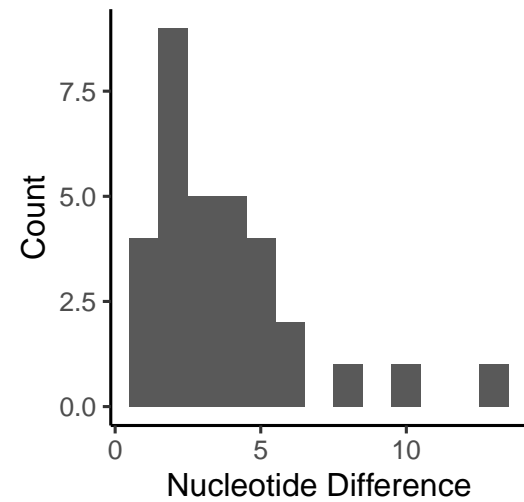
### IGHV3-NL1\*01

257 sequences assigned  
No exact matches.



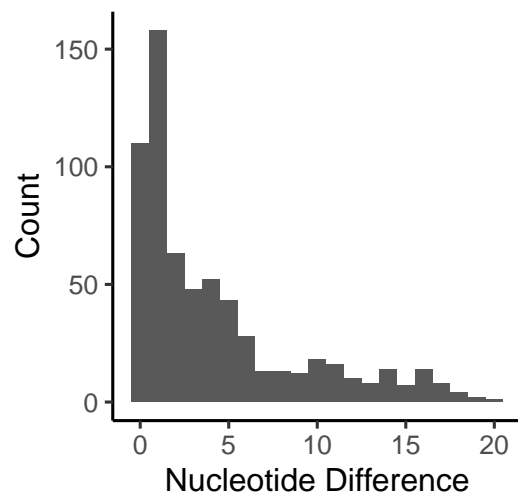
### IGHV4-28\*01

32 sequences assigned  
No exact matches.



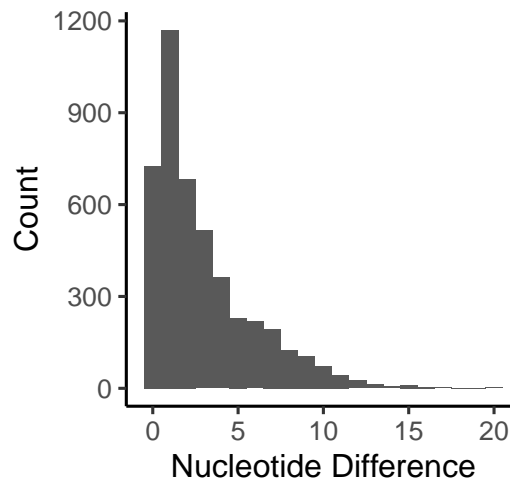
### IGHV3-43D\*04

649 sequences assigned  
110 (16.9%) exact matches, in which:  
93 unique CDR3  
6 unique J



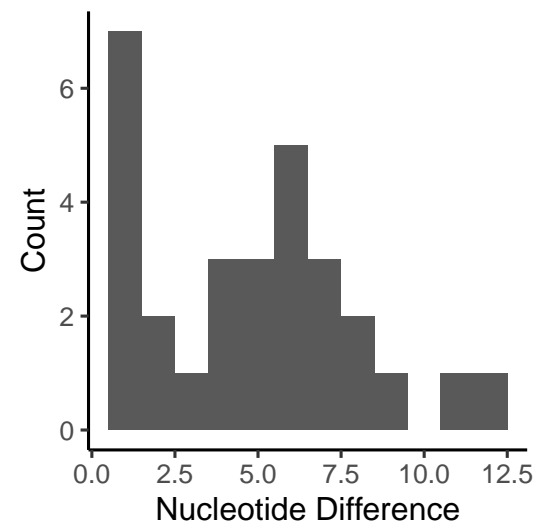
### IGHV4-4\*03

4573 sequences assigned  
725 (15.9%) exact matches, in which:  
612 unique CDR3  
7 unique J



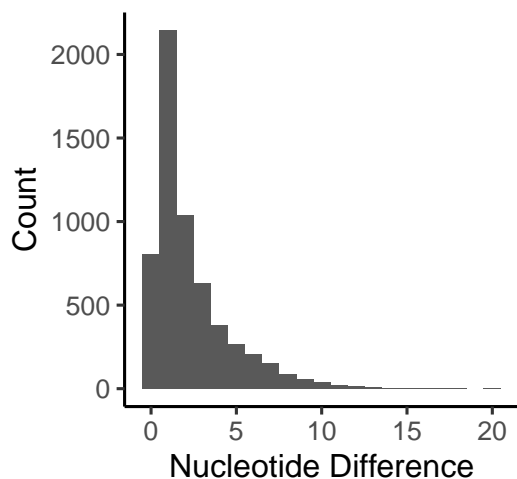
### IGHV4-28\*03

30 sequences assigned  
No exact matches.



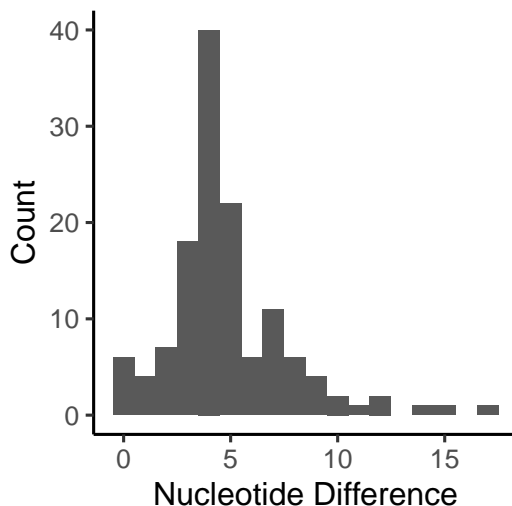
### IGHV4-30-4\*08

5923 sequences assigned  
805 (13.6%) exact matches, in which:  
613 unique CDR3  
7 unique J



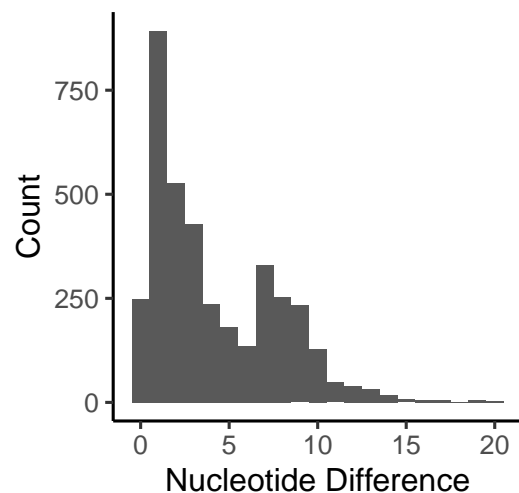
### IGHV4-31\*03

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



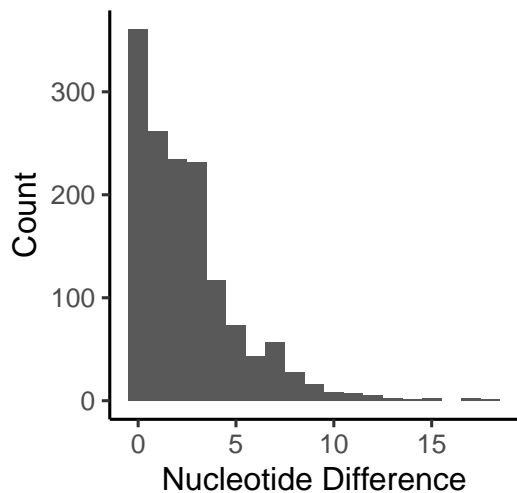
### IGHV4-38-2\*02\_A70G\_A

3872 sequences assigned  
249 (6.4%) exact matches, in which:  
245 unique CDR3  
7 unique J



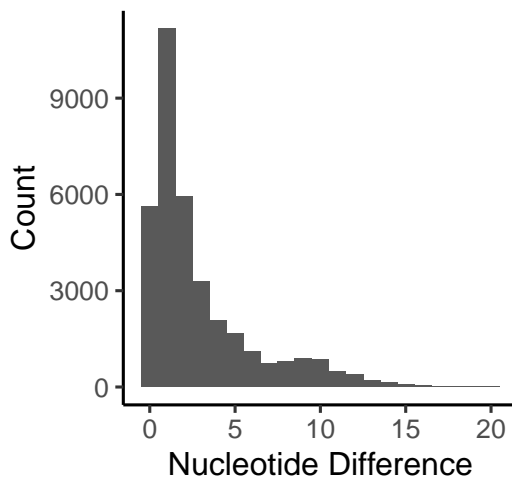
### IGHV4-30-4\*08\_C315G

1461 sequences assigned  
361 (24.7%) exact matches, in which:  
359 unique CDR3  
7 unique J



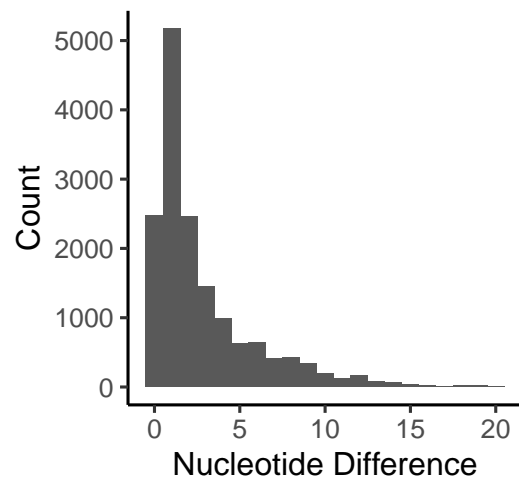
### IGHV4-34\*01

35920 sequences assigned  
5619 (15.6%) exact matches, in which:  
4673 unique CDR3  
7 unique J



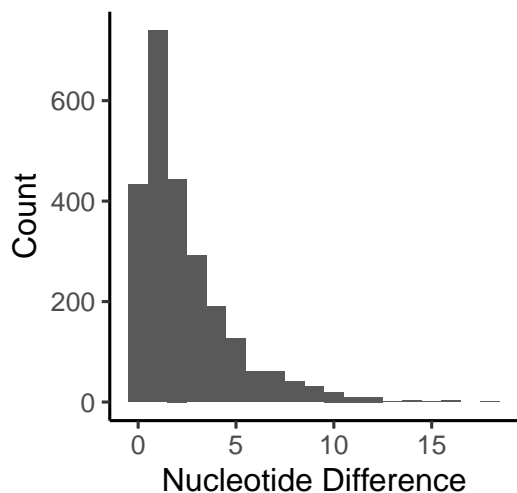
### IGHV4-39\*07

15799 sequences assigned  
2482 (15.7%) exact matches, in which:  
2138 unique CDR3  
7 unique J



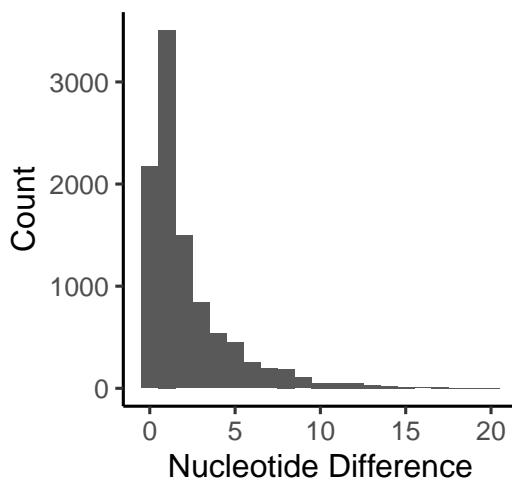
### IGHV4-31\*01

2483 sequences assigned  
433 (17.4%) exact matches, in which:  
347 unique CDR3  
7 unique J



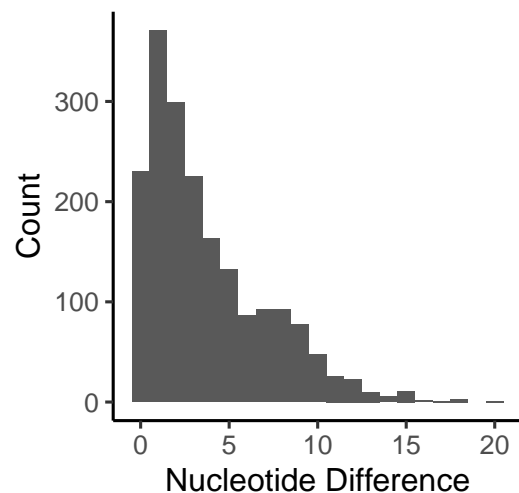
### IGHV4-38-2\*02\_A70G

10073 sequences assigned  
2173 (21.6%) exact matches, in which:  
1875 unique CDR3  
7 unique J



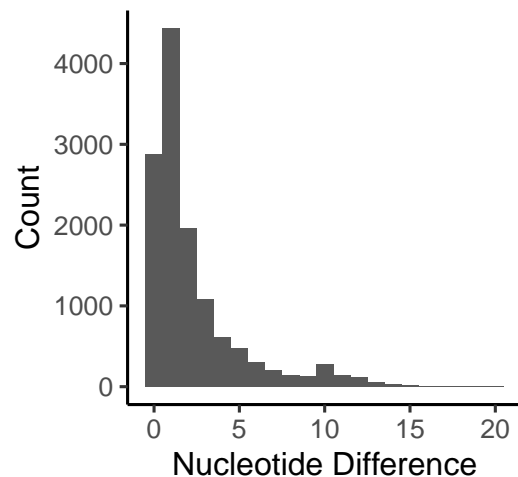
### IGHV4-39\*01\_C237A\_T3

1903 sequences assigned  
230 (12.1%) exact matches, in which:  
224 unique CDR3  
6 unique J



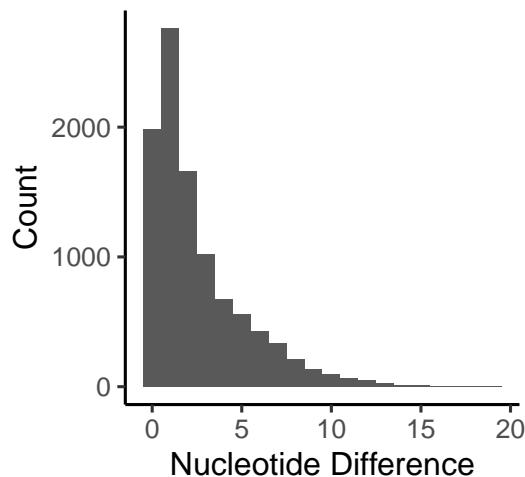
### IGHV4–59\*01

12967 sequences assigned  
2874 (22.2%) exact matches, in which:  
2498 unique CDR3  
7 unique J



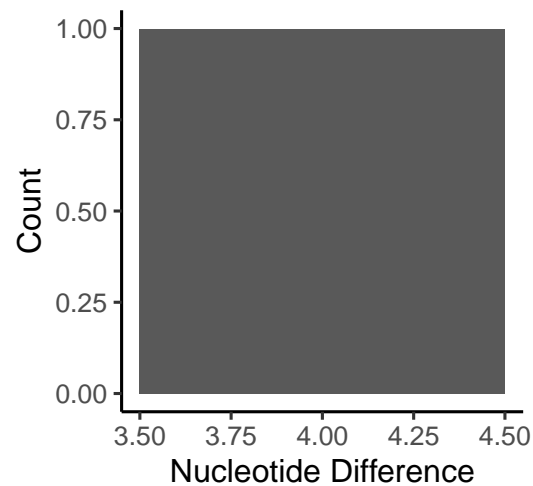
### IGHV4–61\*10

10056 sequences assigned  
1981 (19.7%) exact matches, in which:  
1750 unique CDR3  
7 unique J



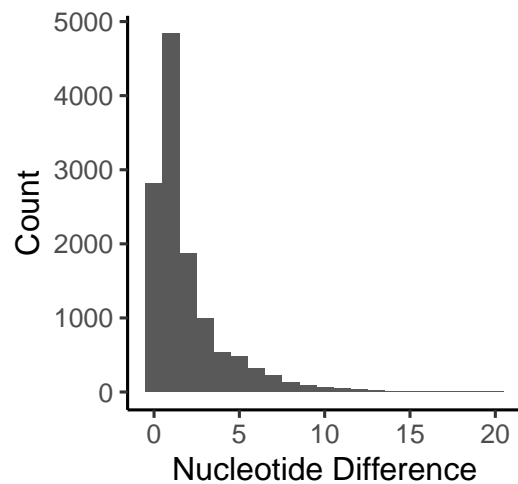
### IGHV4/OR15–8\*01

4 sequences assigned  
No exact matches.



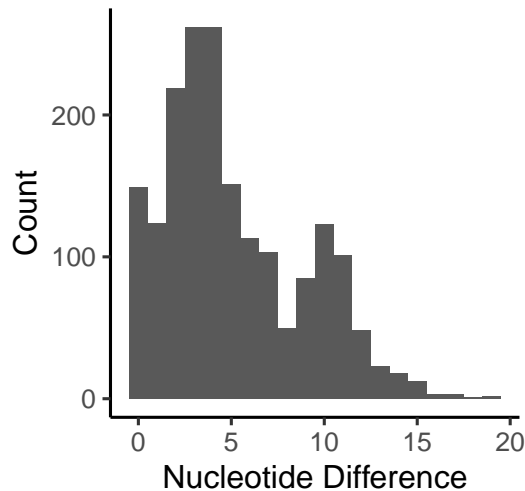
### IGHV4–59\*11

12482 sequences assigned  
2815 (22.6%) exact matches, in which:  
2408 unique CDR3  
7 unique J



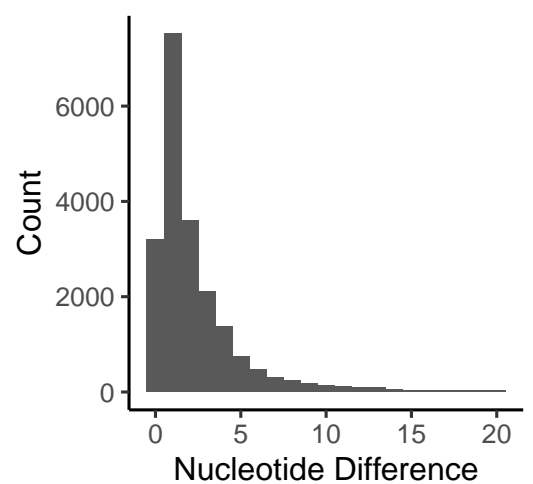
### IGHV4–61\*08\_G48A\_G49A

1876 sequences assigned  
149 (7.9%) exact matches, in which:  
149 unique CDR3  
6 unique J



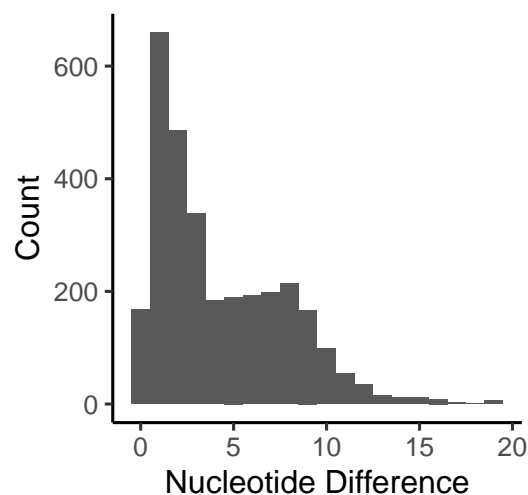
### IGHV5–51\*01

20627 sequences assigned  
3200 (15.5%) exact matches, in which:  
2318 unique CDR3  
7 unique J



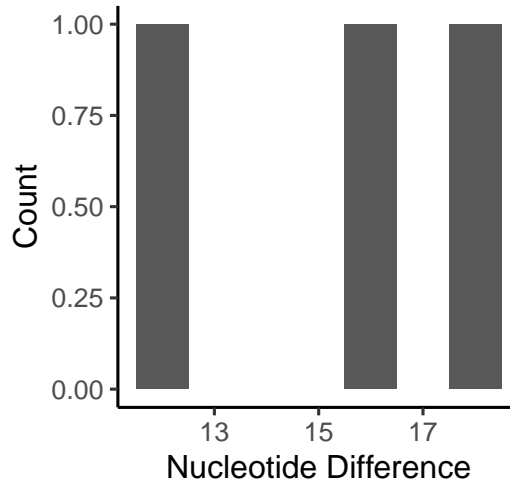
### IGHV4–59\*12

3064 sequences assigned  
168 (5.5%) exact matches, in which:  
167 unique CDR3  
6 unique J



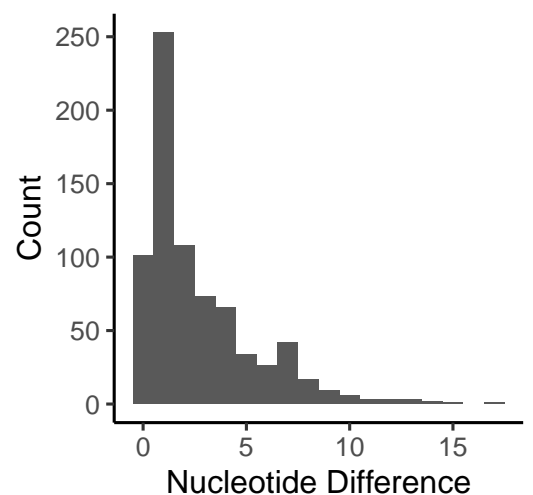
### IGHV1/OR15–3\*02

4 sequences assigned  
No exact matches.



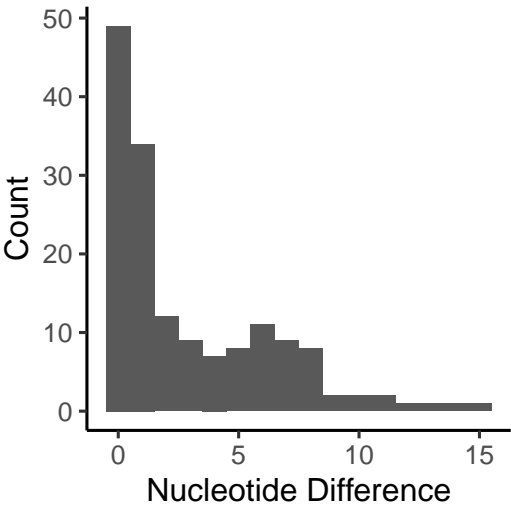
### IGHV6–1\*01

748 sequences assigned  
101 (13.5%) exact matches, in which:  
82 unique CDR3  
6 unique J



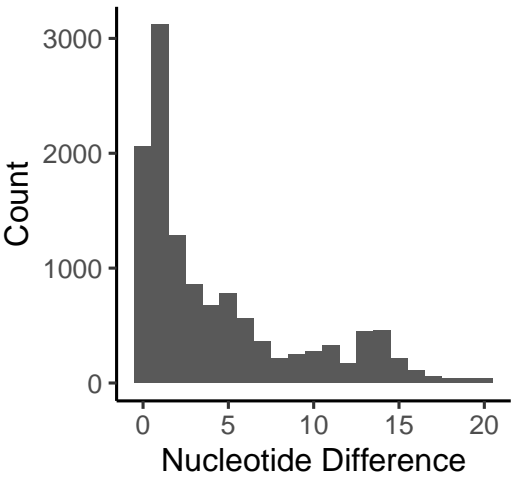
# IGHV6-1\*01\_A315G

158 sequences assigned  
49 (31%) exact matches, in which:  
49 unique CDR3  
5 unique J



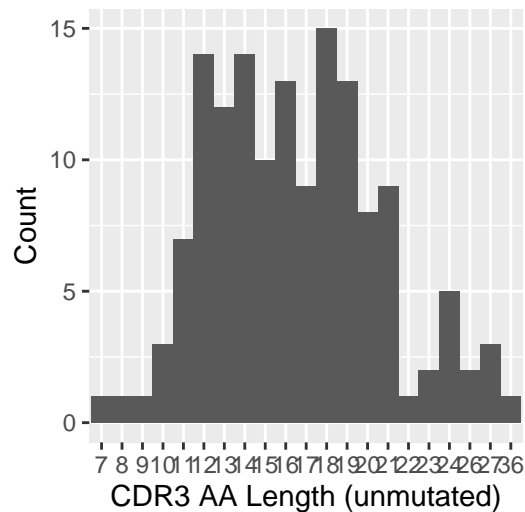
# IGHV7-4-1\*02

12543 sequences assigned  
2062 (16.4%) exact matches, in which:  
1718 unique CDR3  
7 unique J

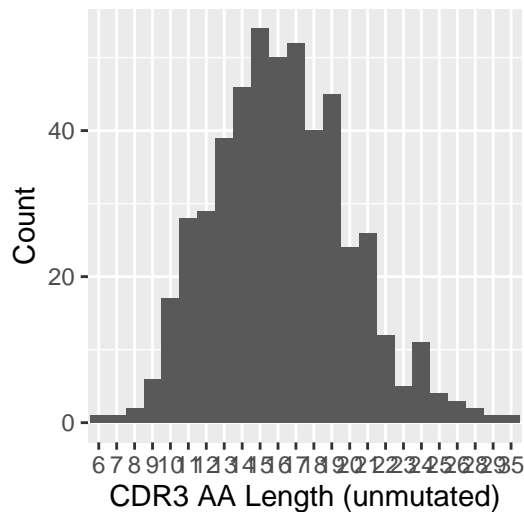




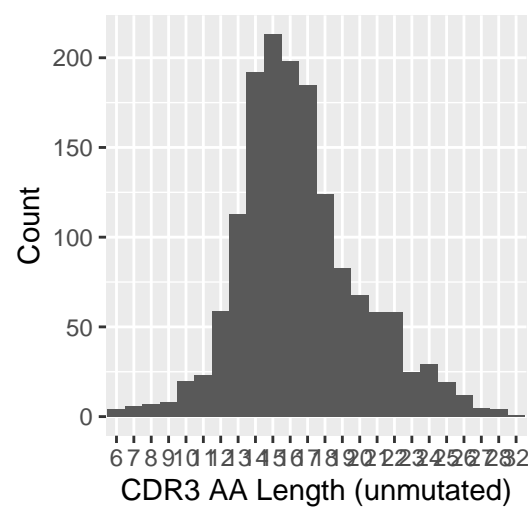
IGHV1-3\*04\_A291G\_T300C



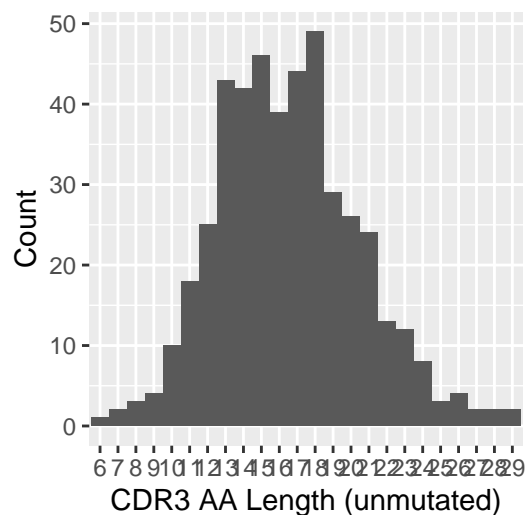
IGHV1-69-2\*01\_A315G\_C3



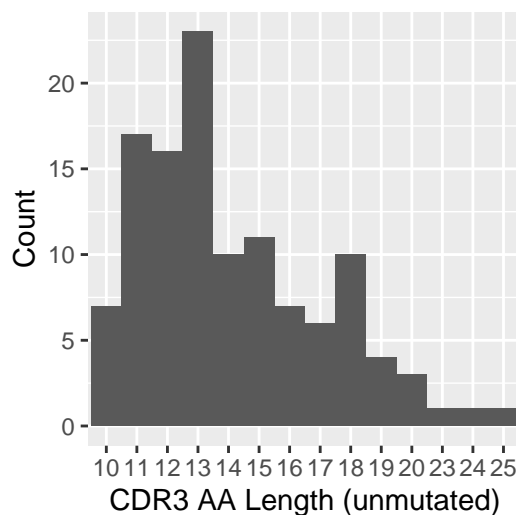
IGHV3-9\*01\_T194C\_C198T



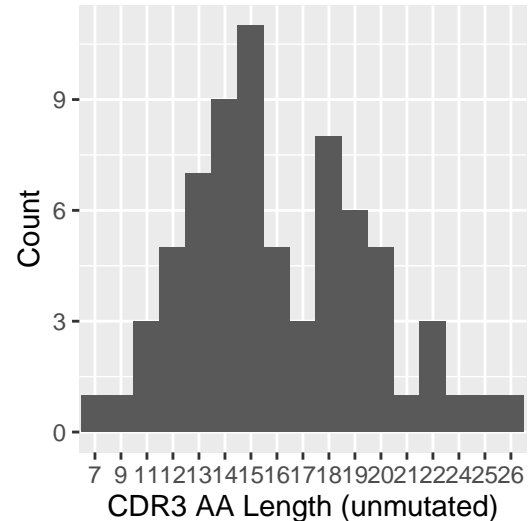
IGHV1-24\*01\_A315G\_C317C



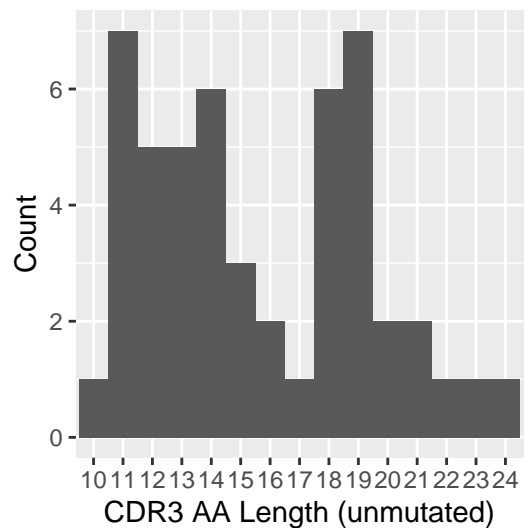
IGHV2-70\*04\_C6T



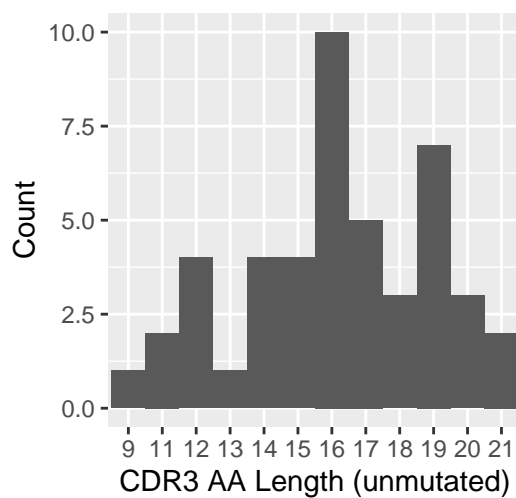
IGHV3-13\*01\_A315G



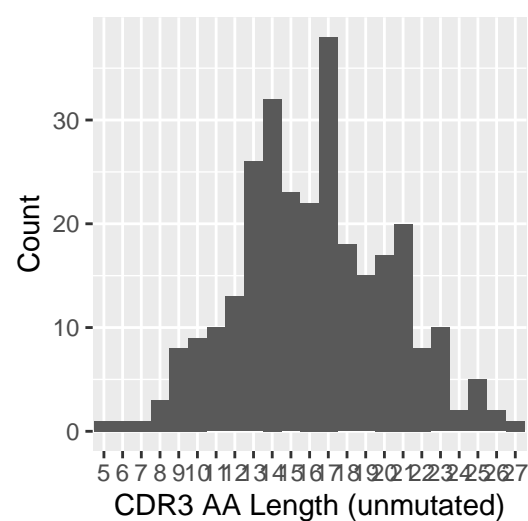
IGHV1-58\*02\_G316A\_C317C



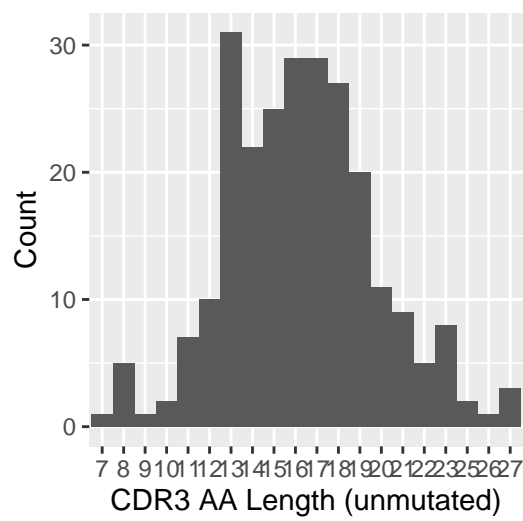
IGHV2-70\*15\_G303A



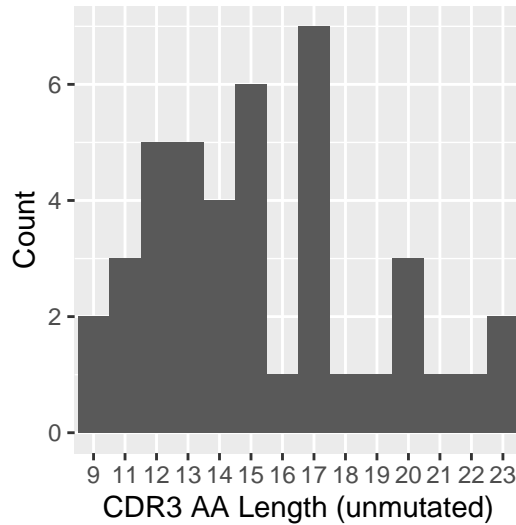
IGHV3-23\*01\_A303G\_A317C



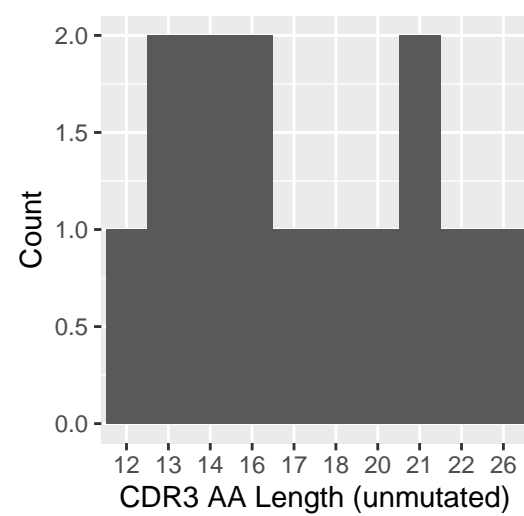
IGHV3-30-3\*02\_G75C



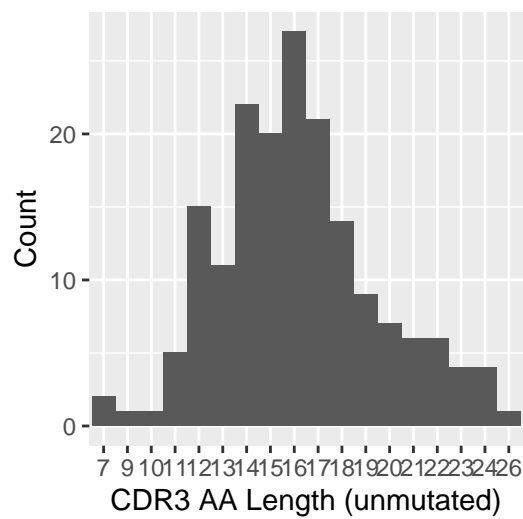
IGHV3-49\*04\_A313G\_T315G



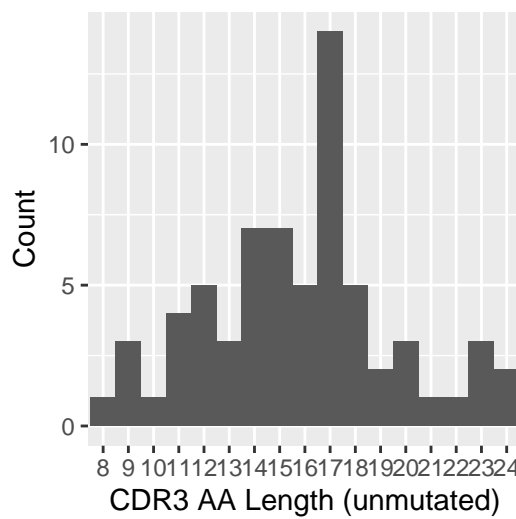
IGHV3-72\*01\_T315G



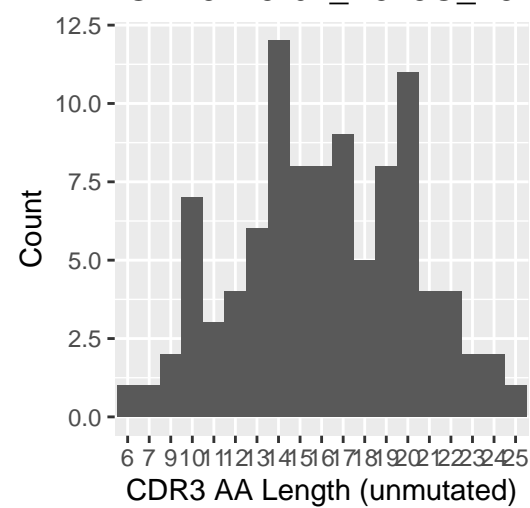
IGHV3-30-3\*02\_G75C\_T28i



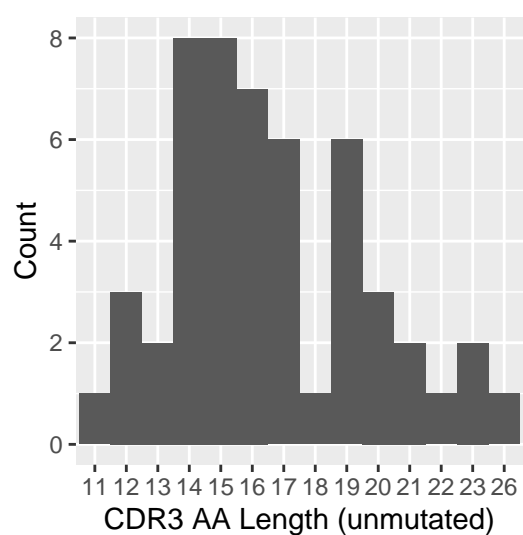
IGHV3-66\*01\_A223C\_T267C



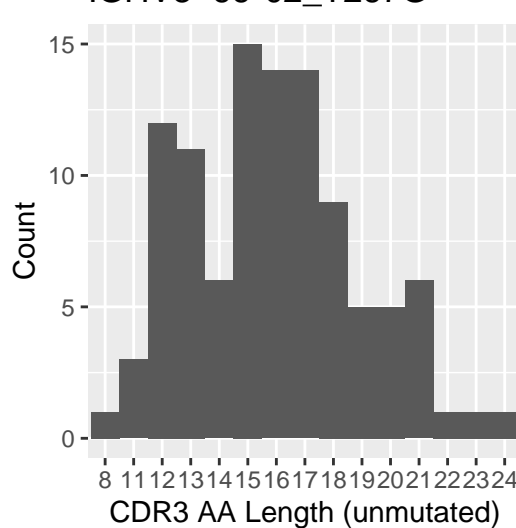
IGHV3-73\*01\_A313G\_T315G



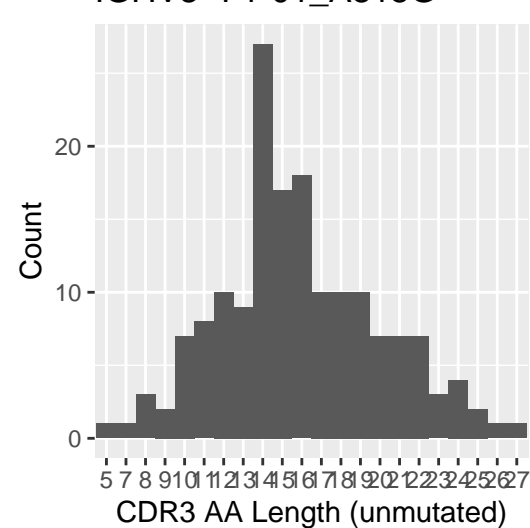
IGHV3-49\*03\_A313G\_T315G



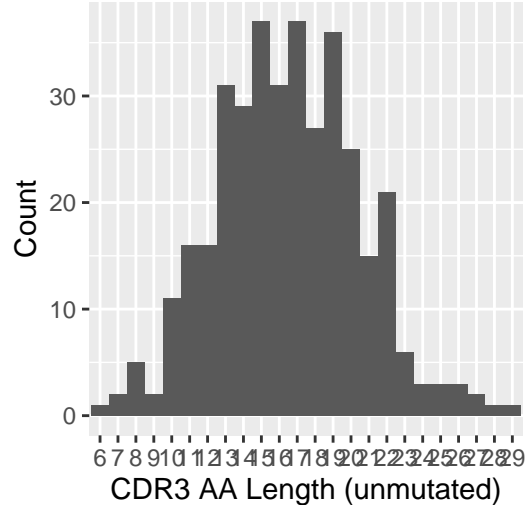
IGHV3-66\*02\_T267G



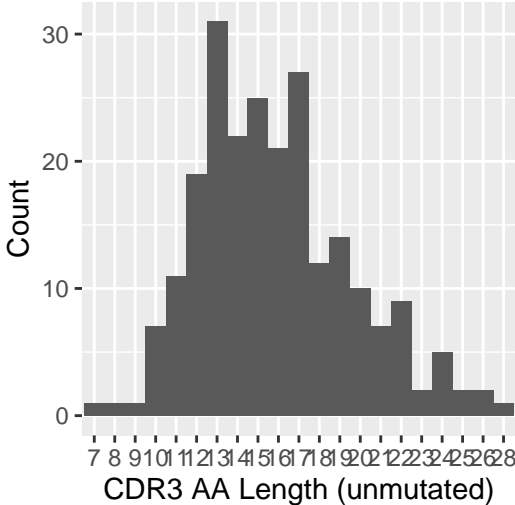
IGHV3-74\*01\_A315G



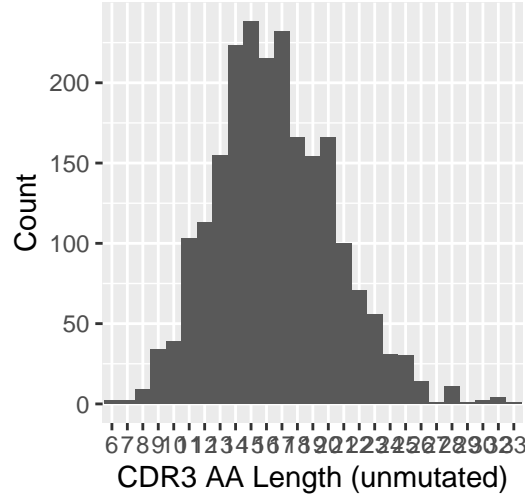
IGHV4-30-4\*08\_C315G



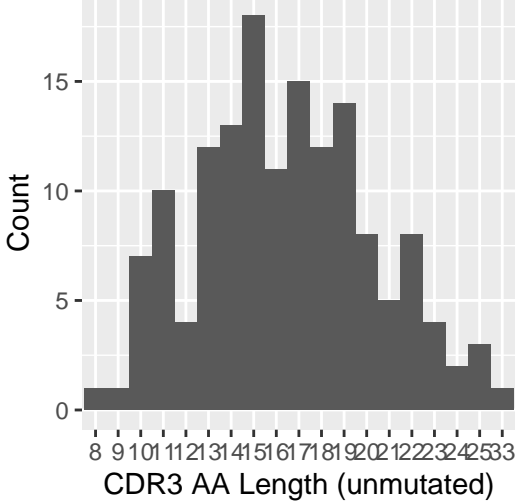
IGHV4-39\*01\_C237A\_T300C



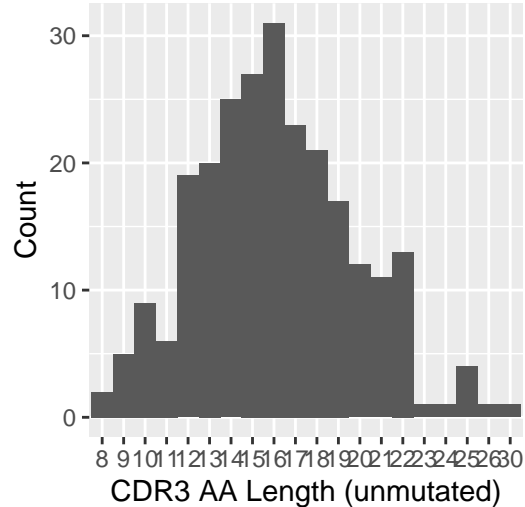
IGHV4-38-2\*02\_A70G



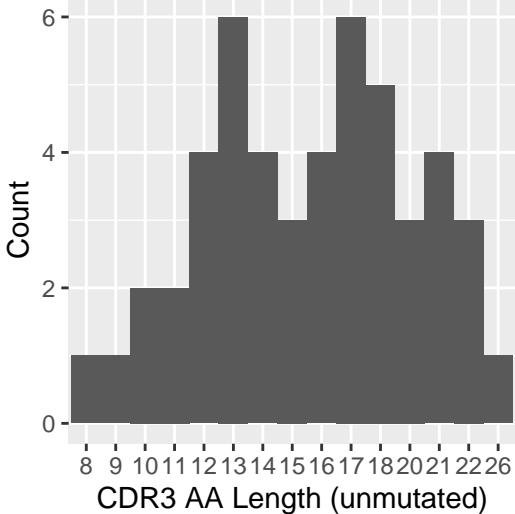
IGHV4-61\*08\_G48A\_G49C\_G88A\_G107A\_G129C\_A147C\_T1



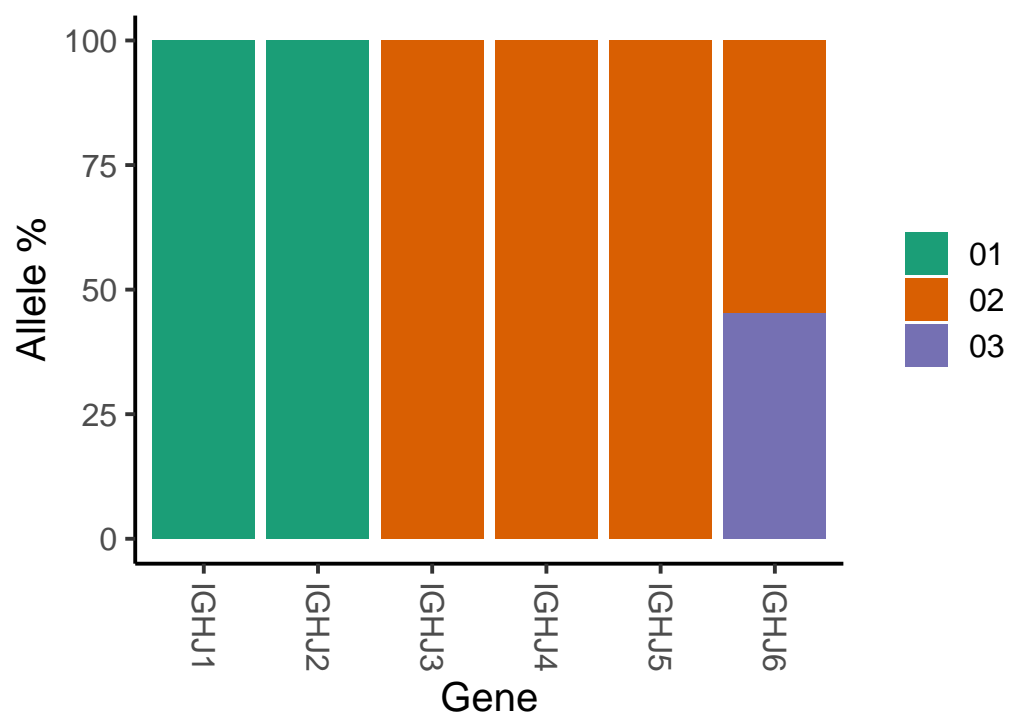
IGHV4-38-2\*02\_A70G\_A29



IGHV6-1\*01\_A315G



Allele Usage



Sequence Count by IGHJ6 allele usage

