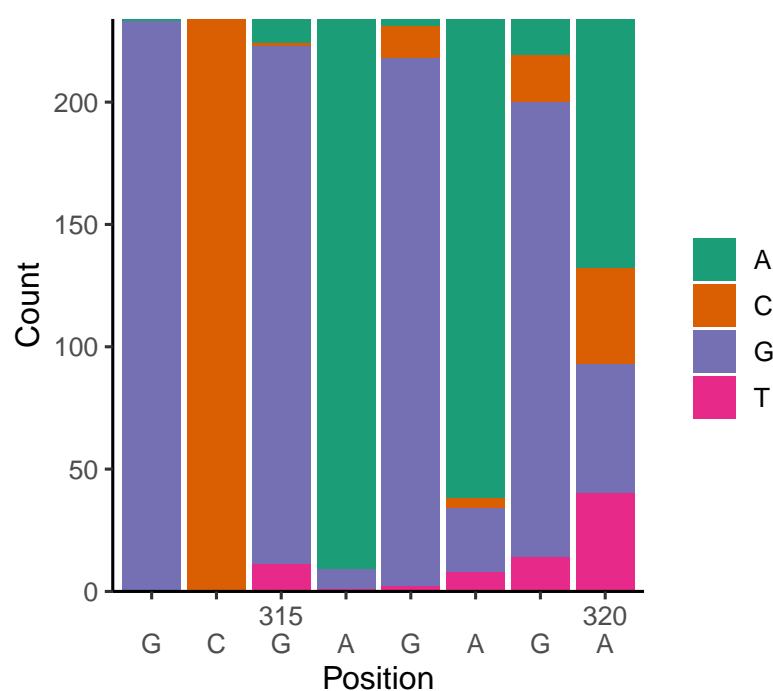
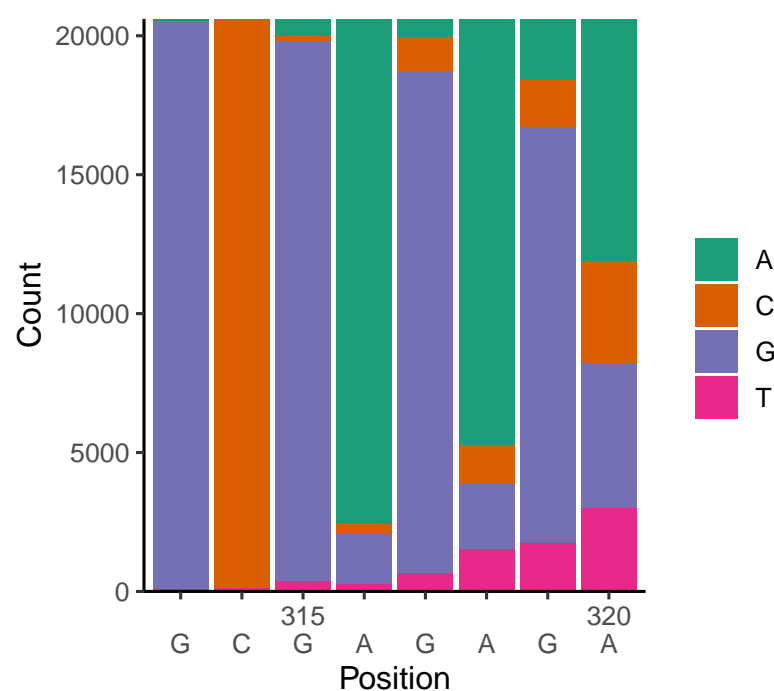


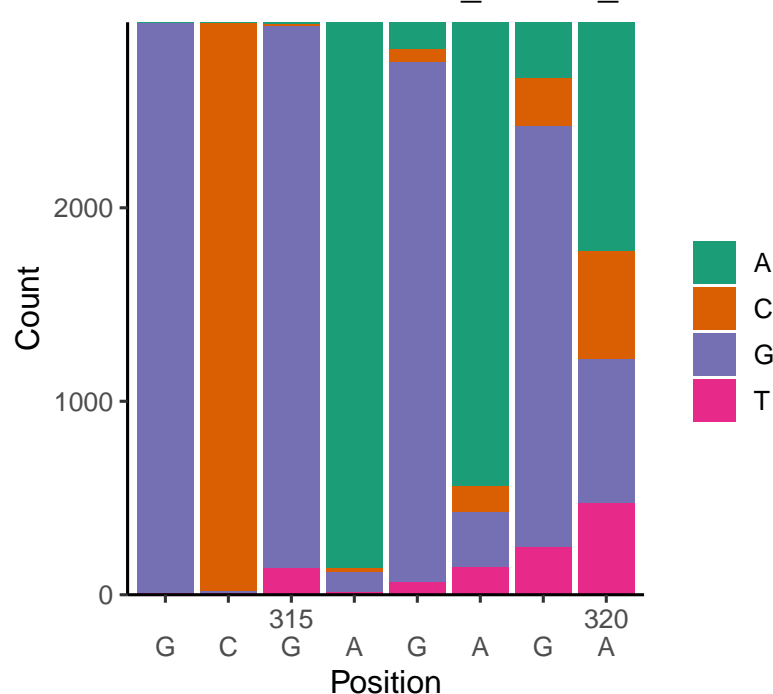
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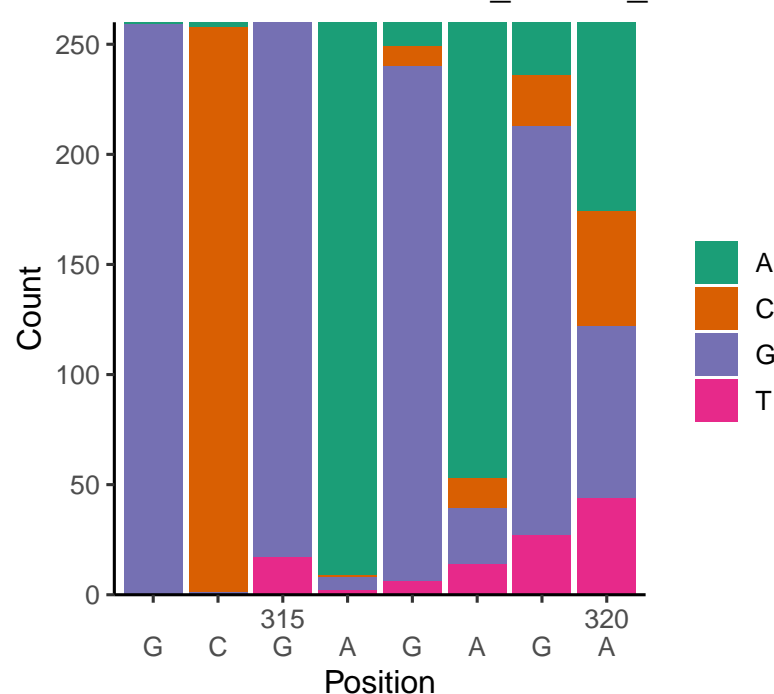
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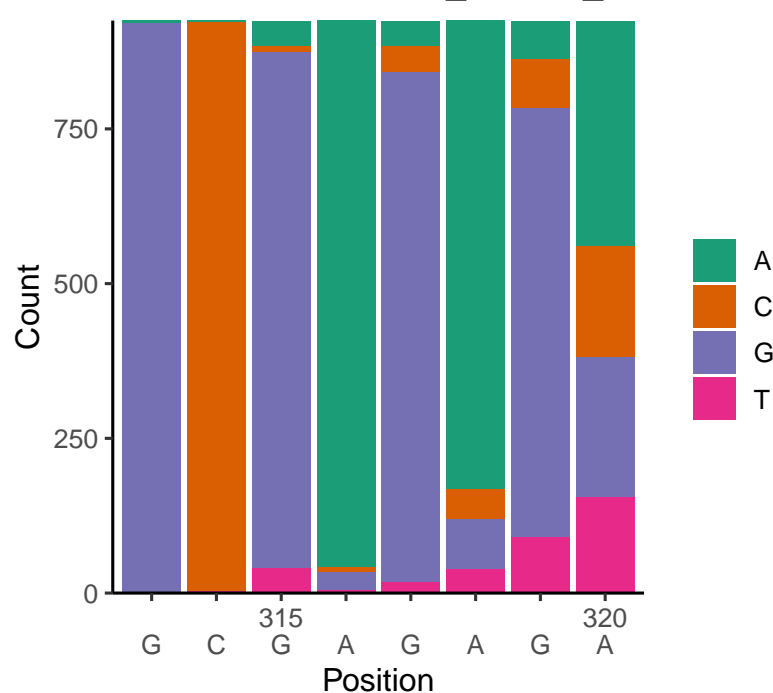
Gene IGHV1-24\*01\_A315G\_C317G



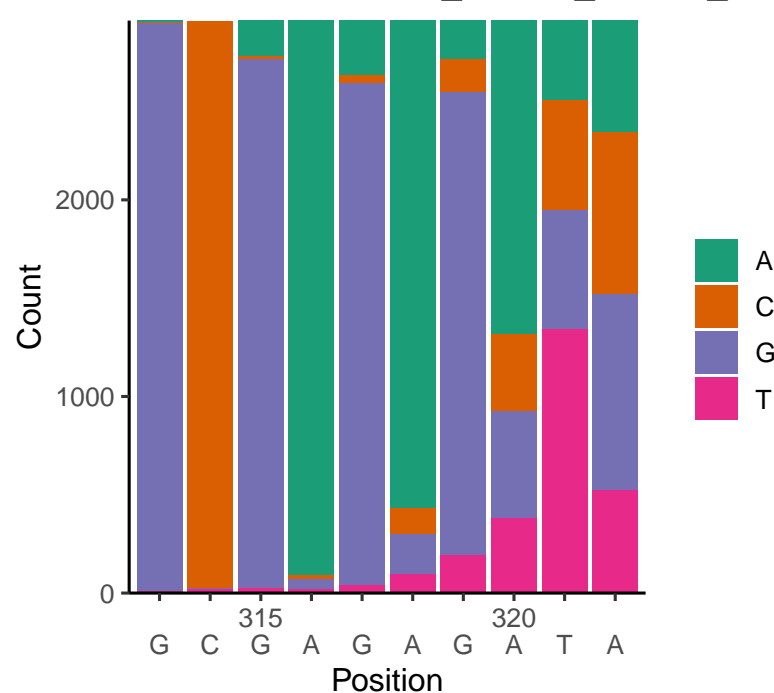
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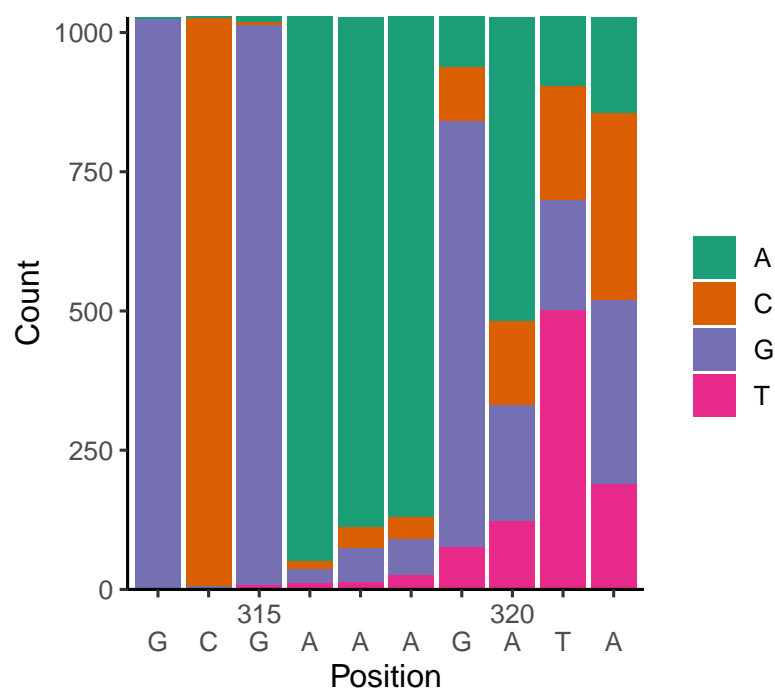
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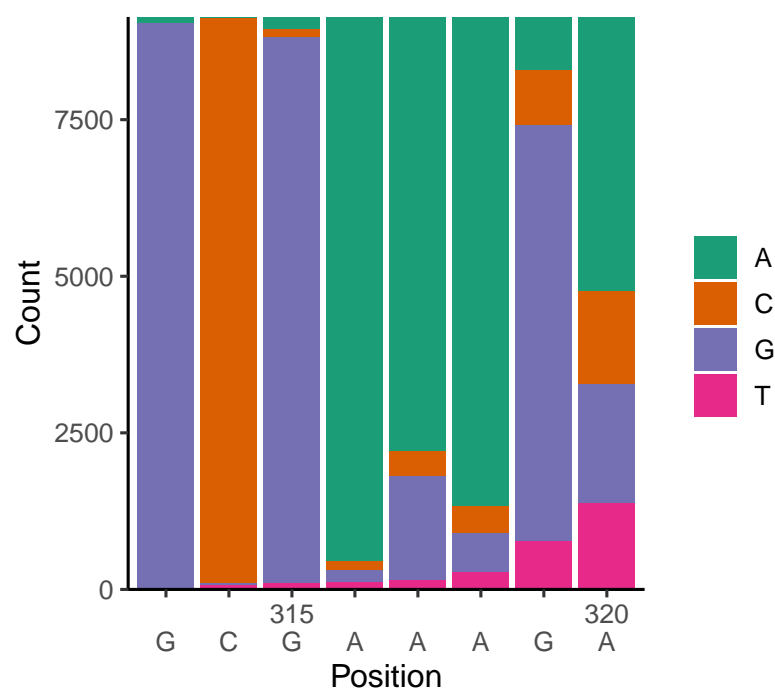
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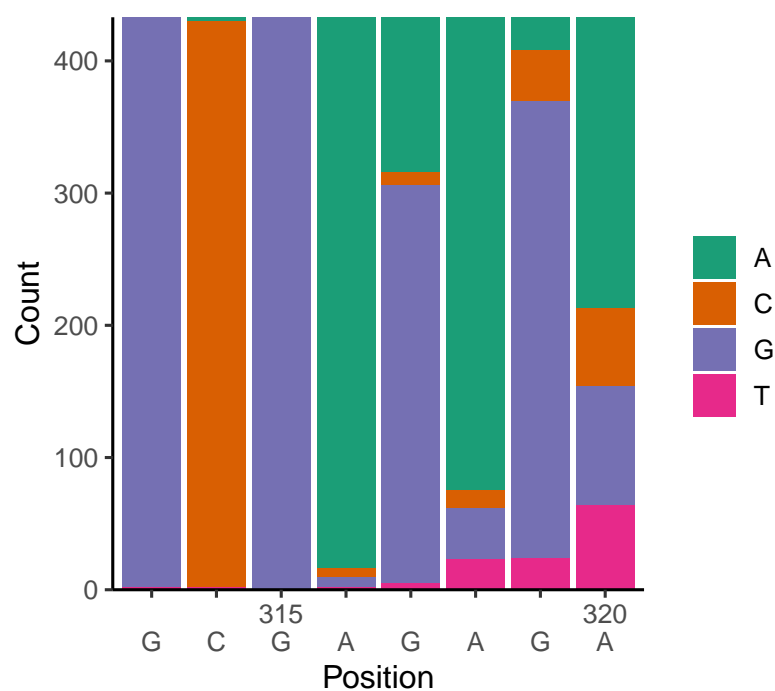
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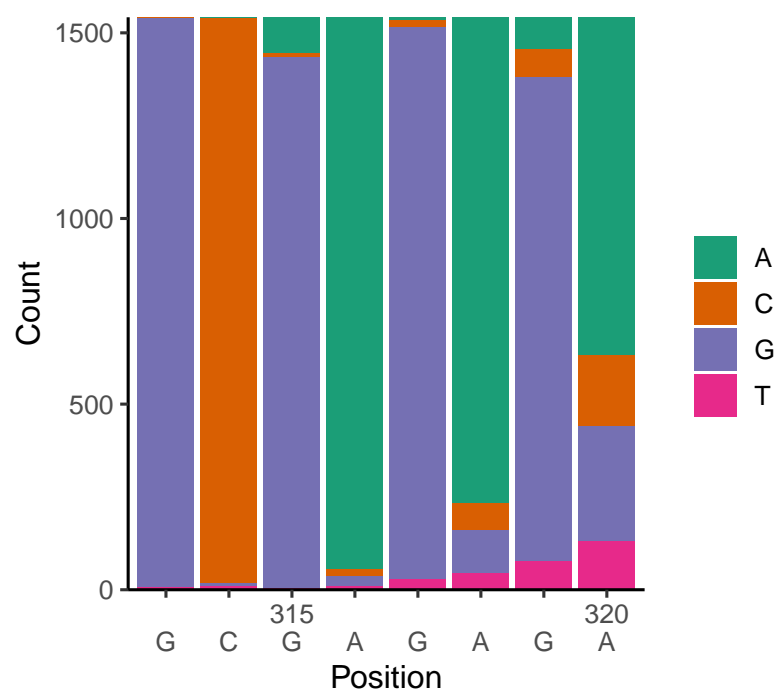
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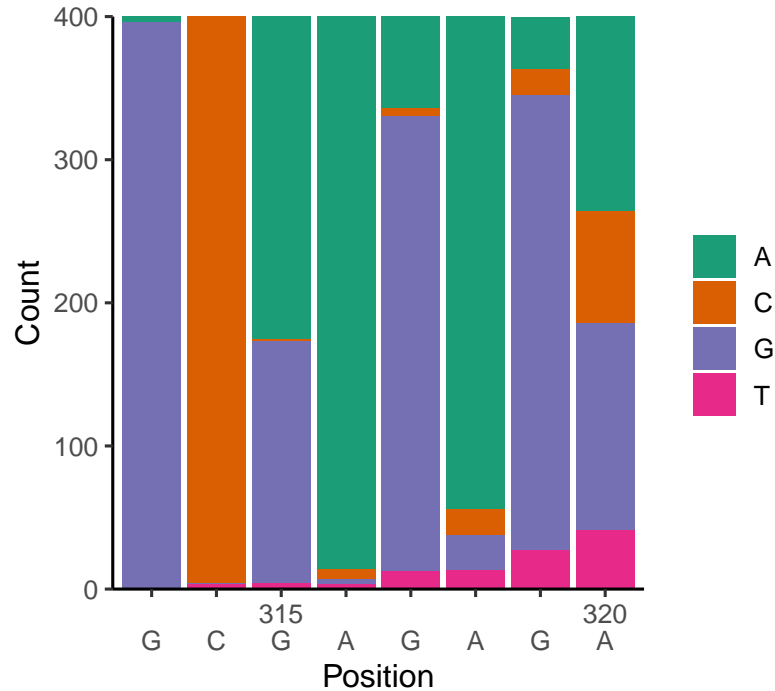
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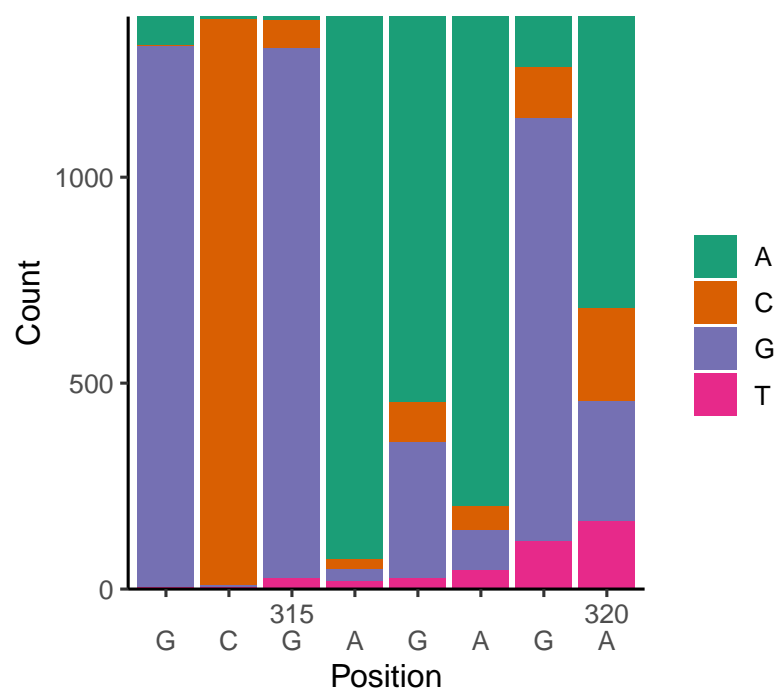
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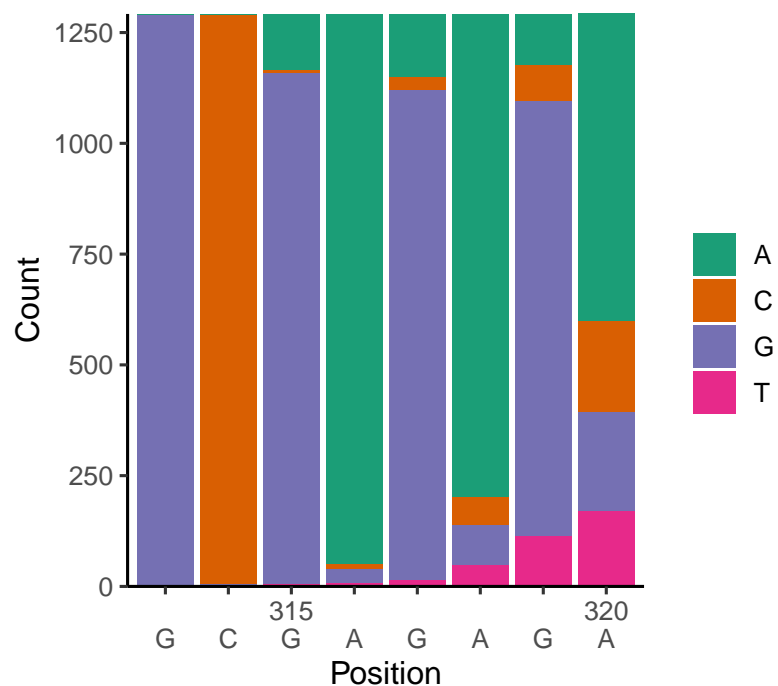
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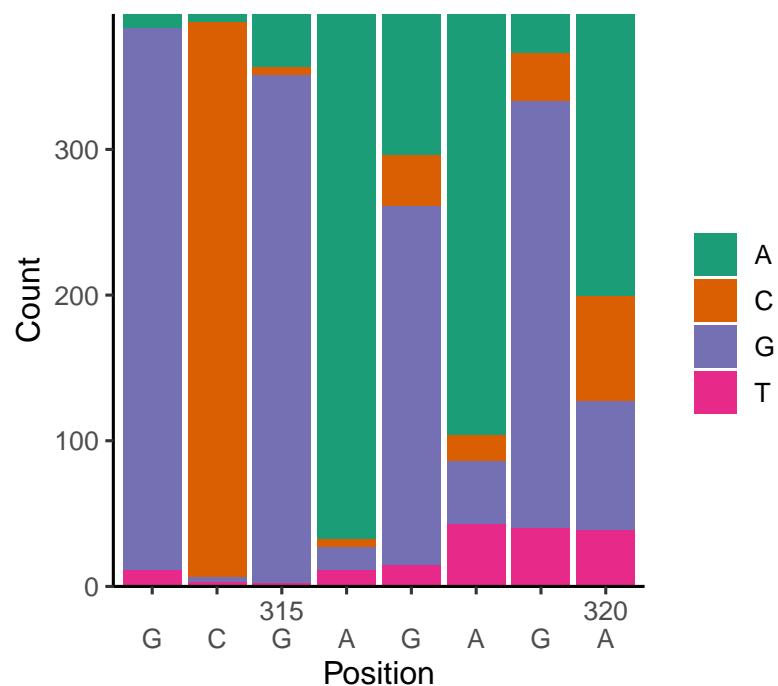
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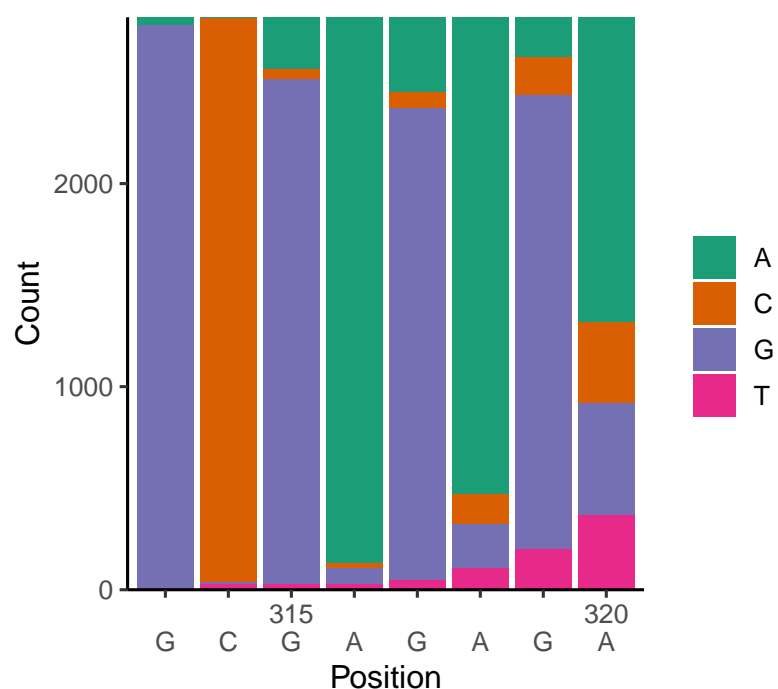
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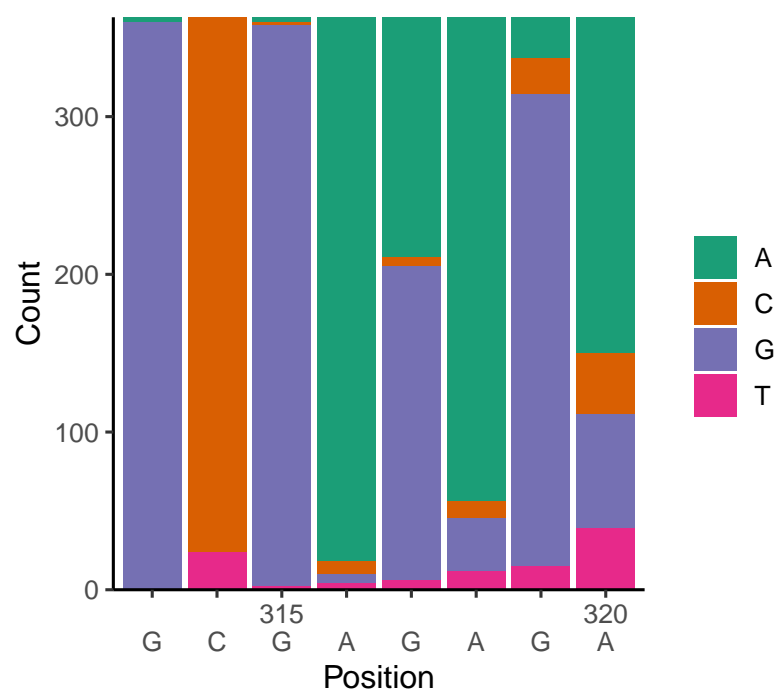
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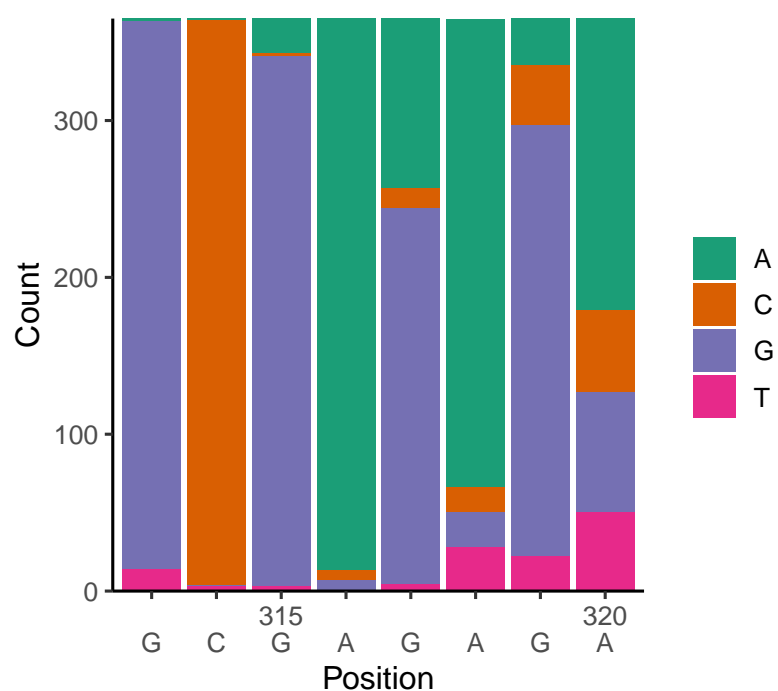
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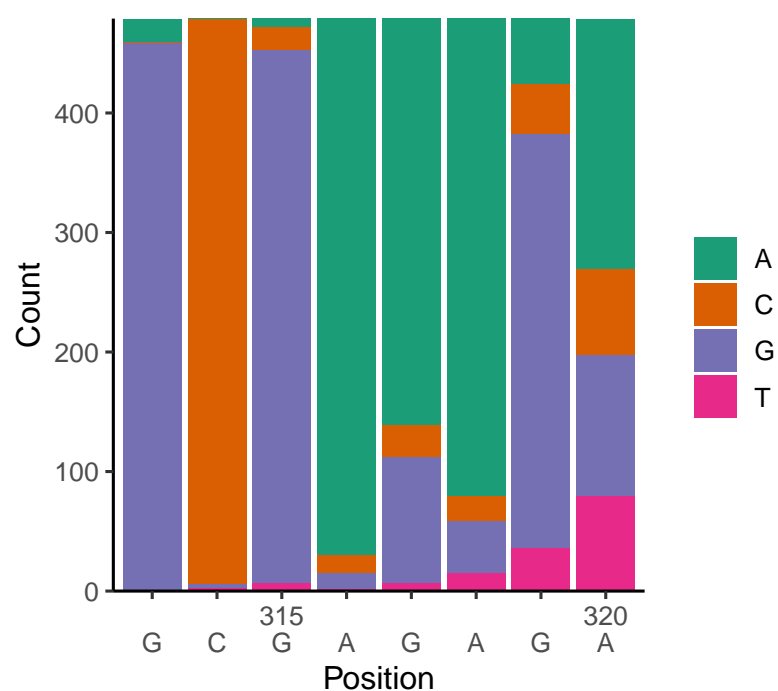
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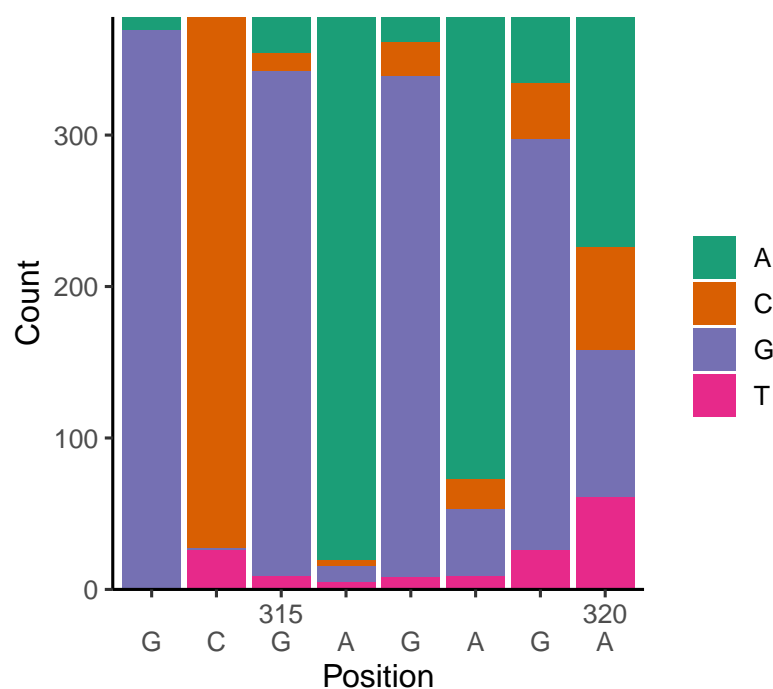
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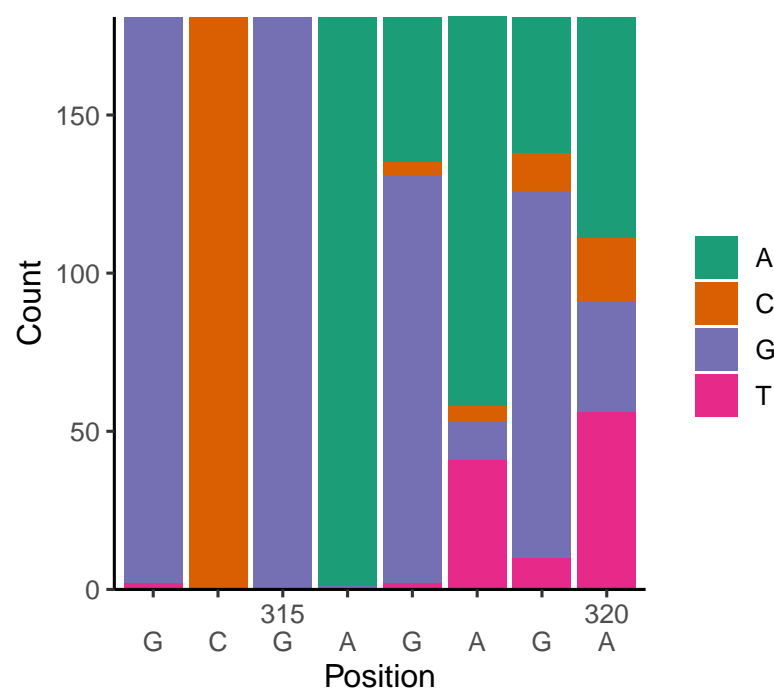
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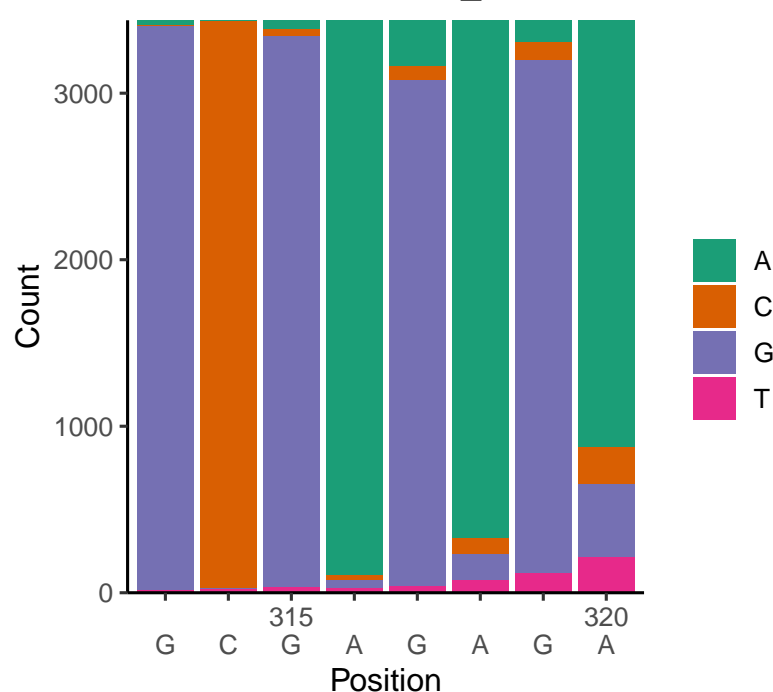
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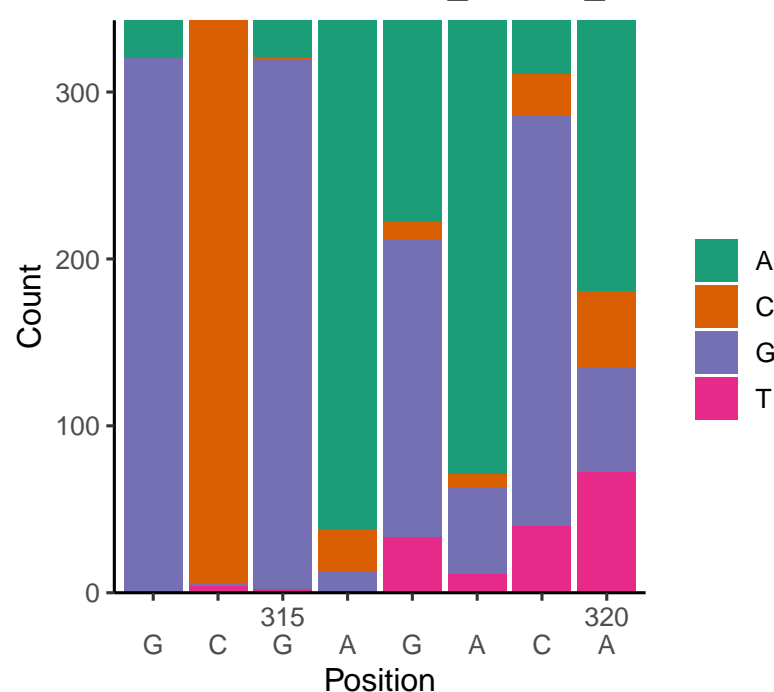
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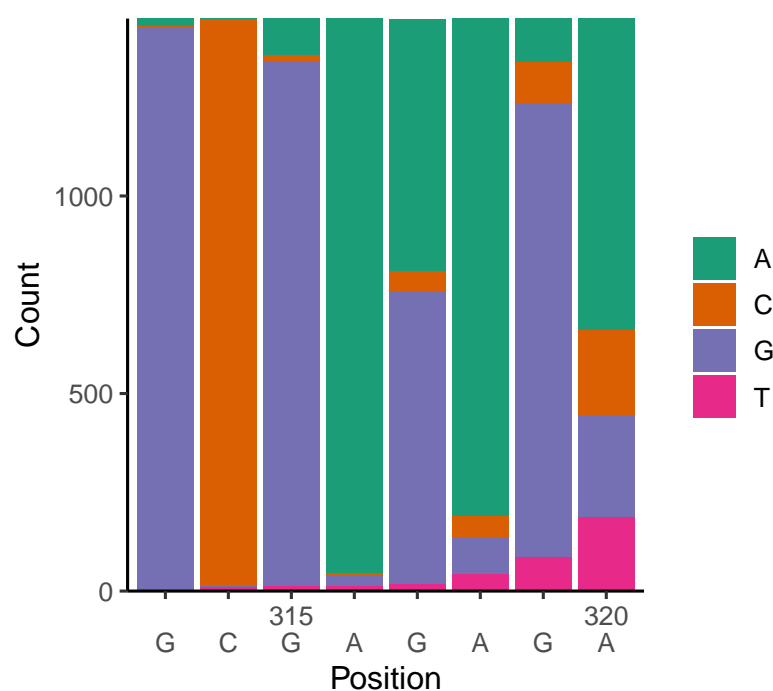
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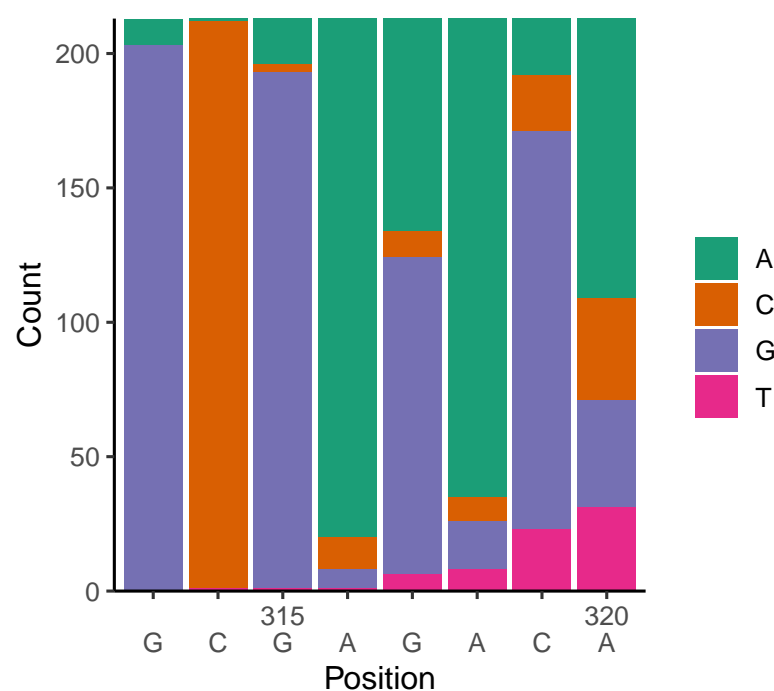
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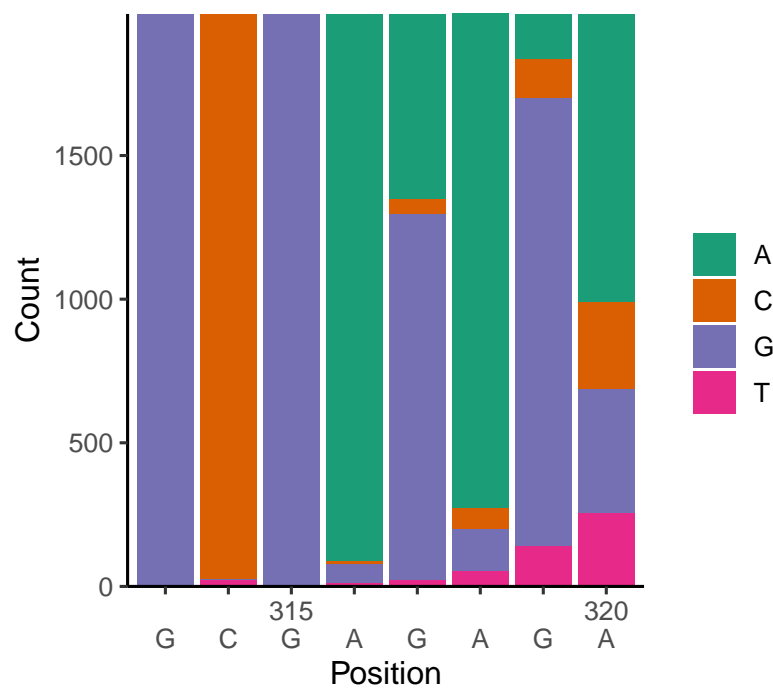
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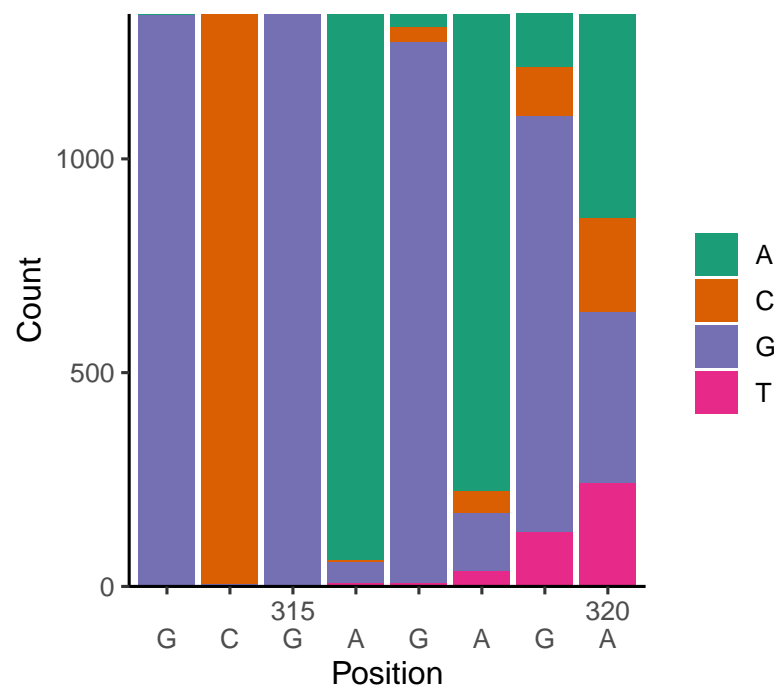
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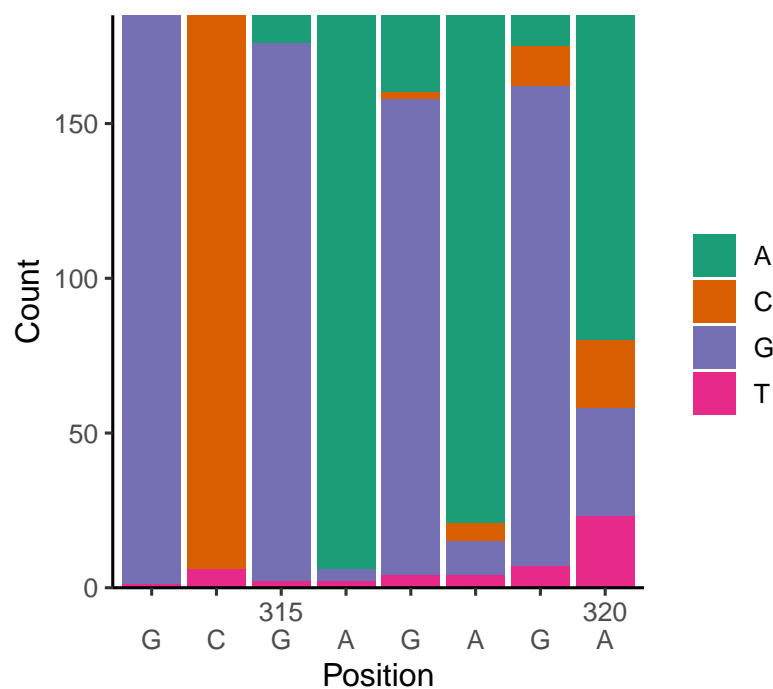
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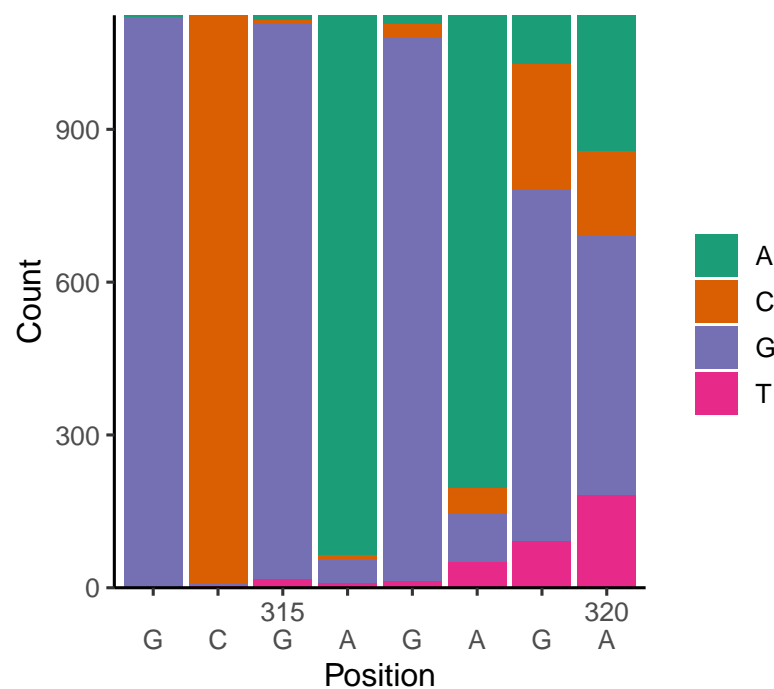
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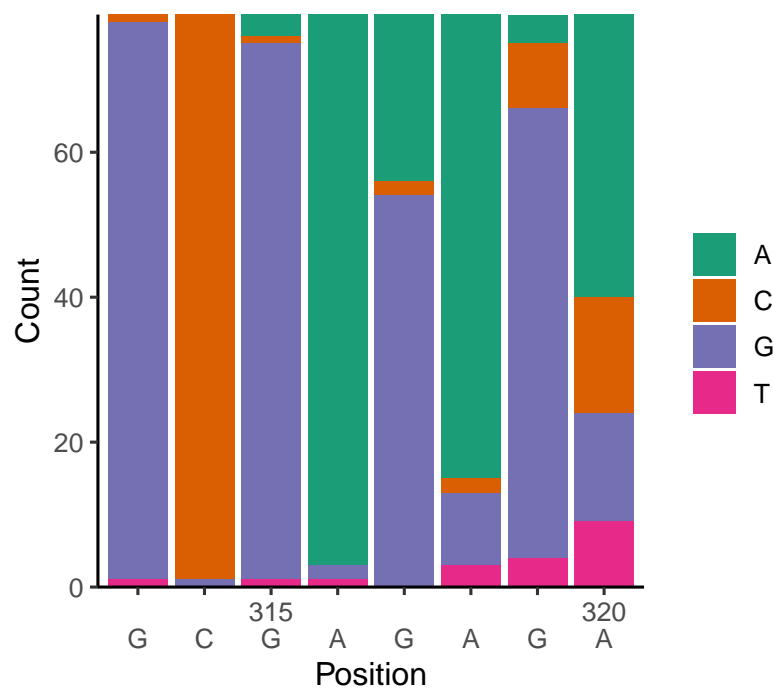
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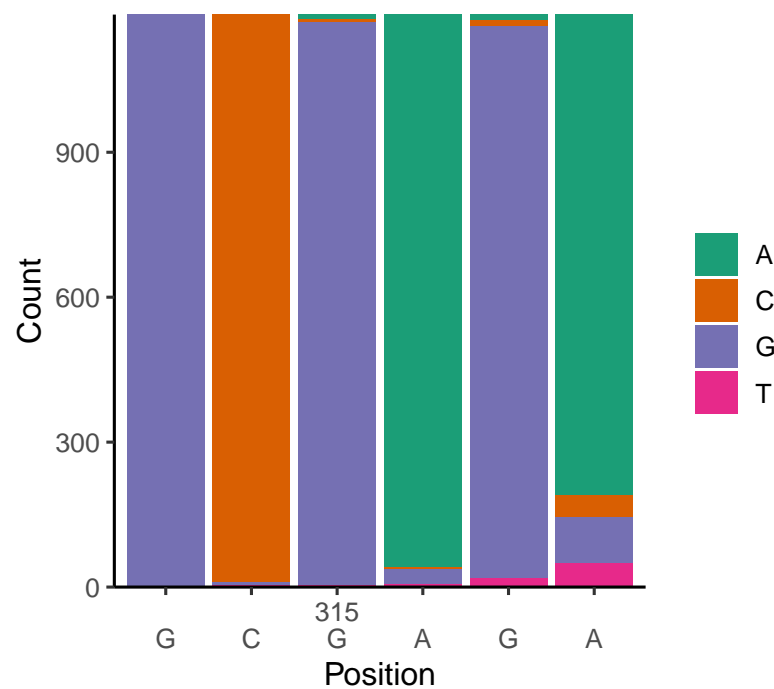
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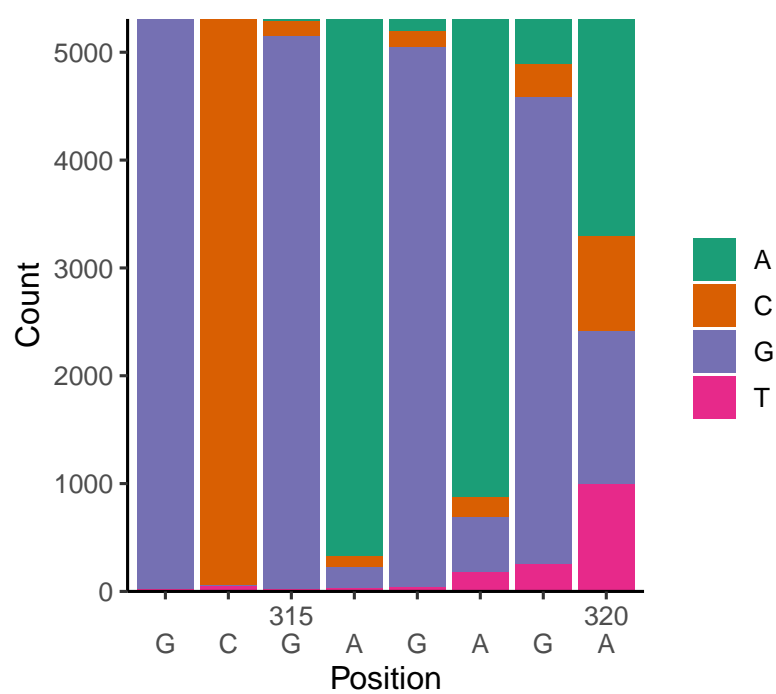
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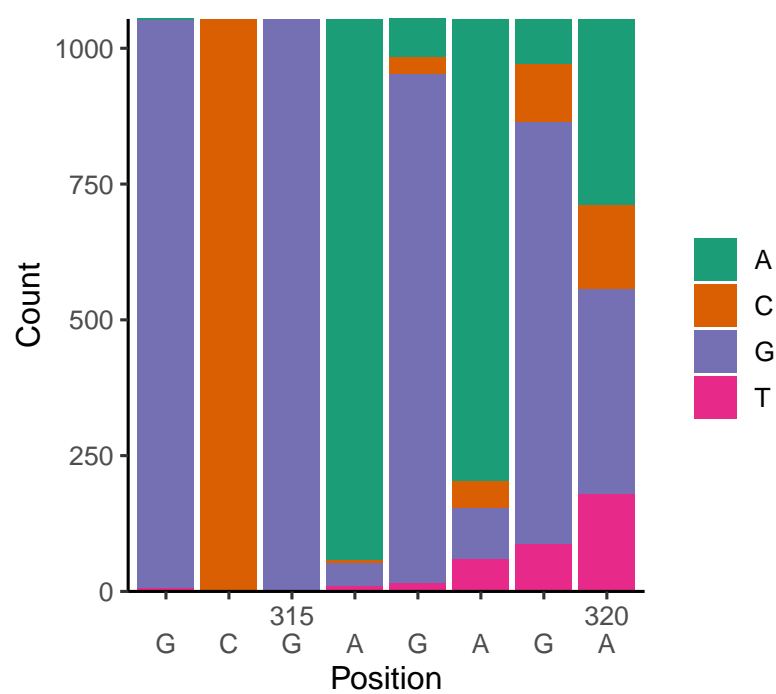
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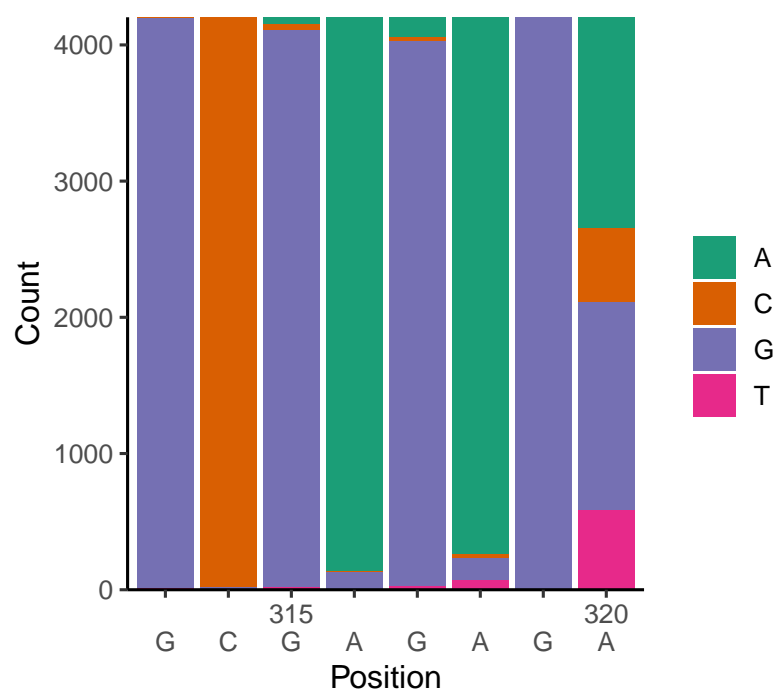
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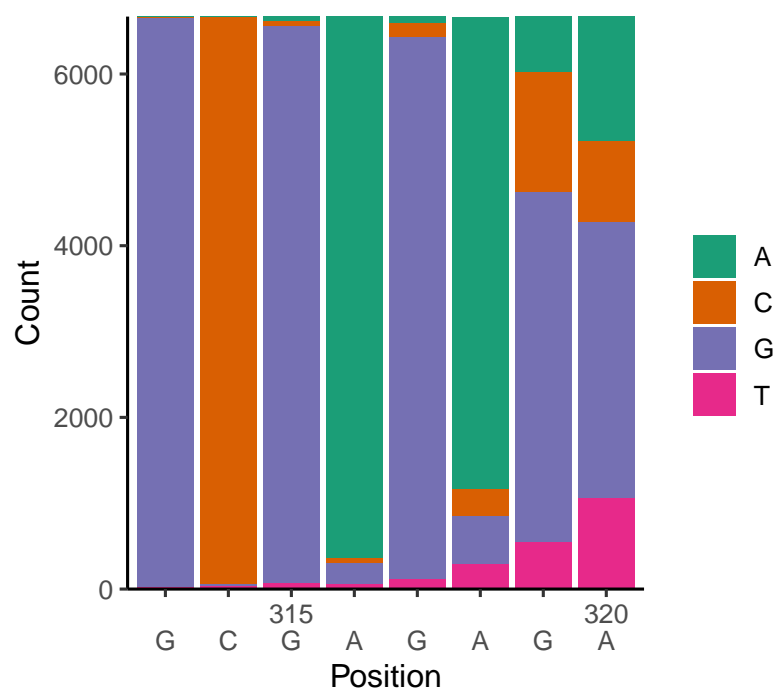
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Gene IGHV4-39\*02\_C258G



Gene IGHV4-59\*12\_C300T



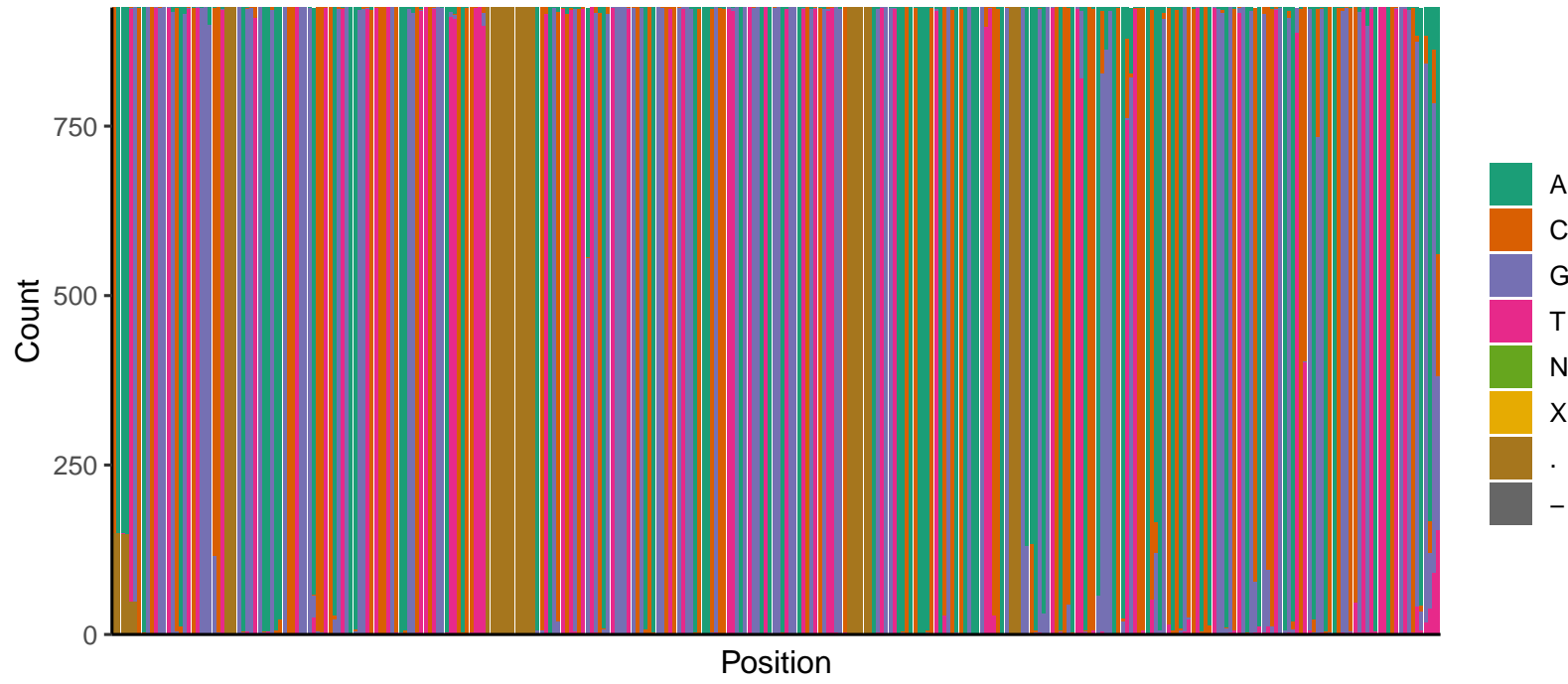
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Gene IGHV1-24\*01\_A315G\_C317G



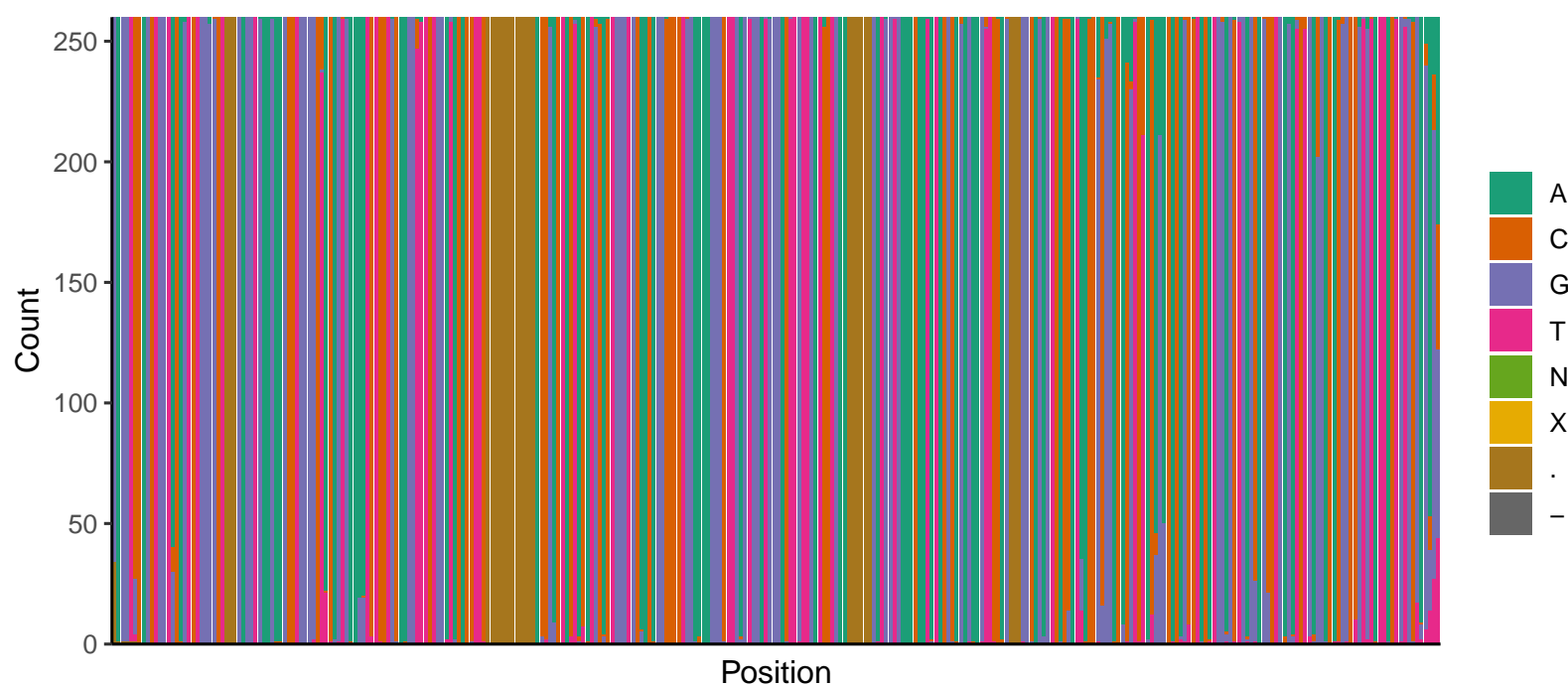
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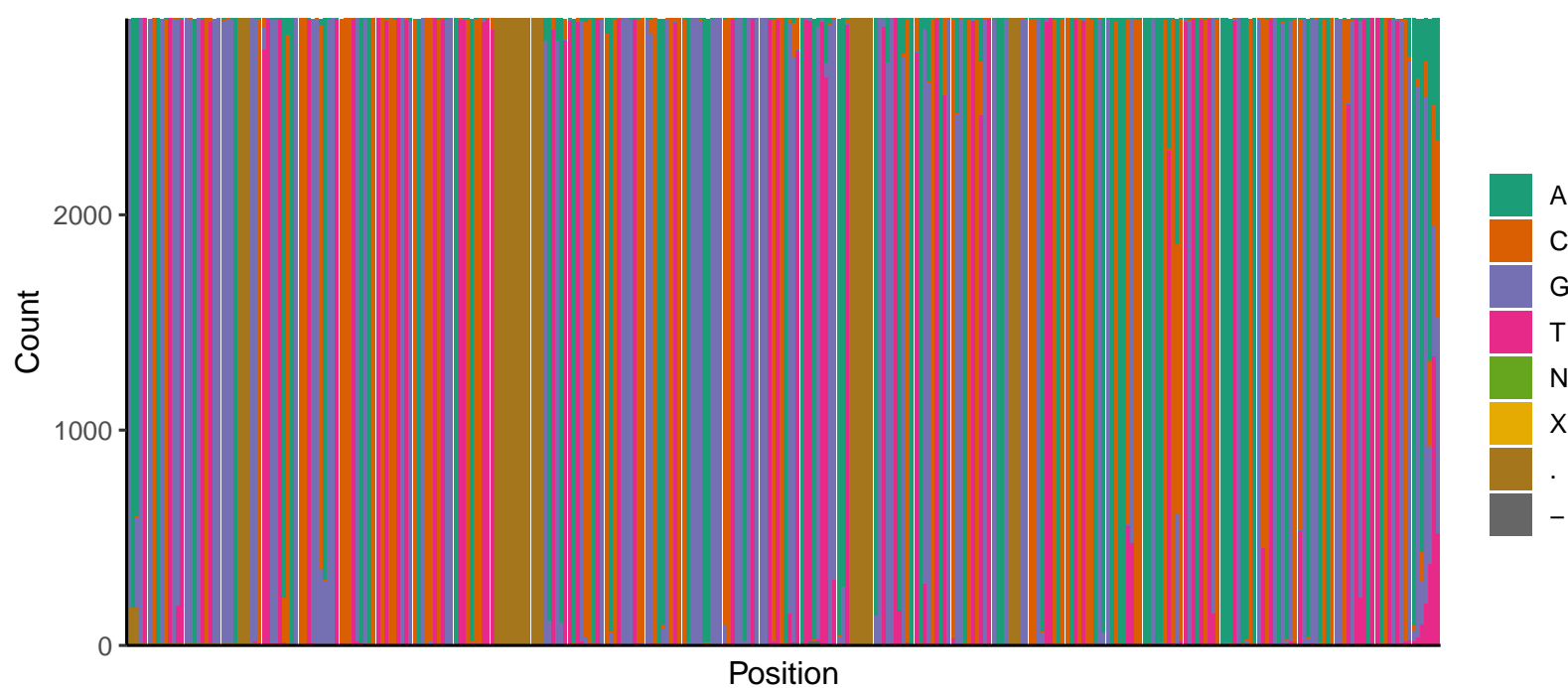
Gene IGHV1-69\*08\_C191T



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



Gene IGHV3-9\*01\_T279C\_T288C\_C300T\_T301G\_A315G\_A317G

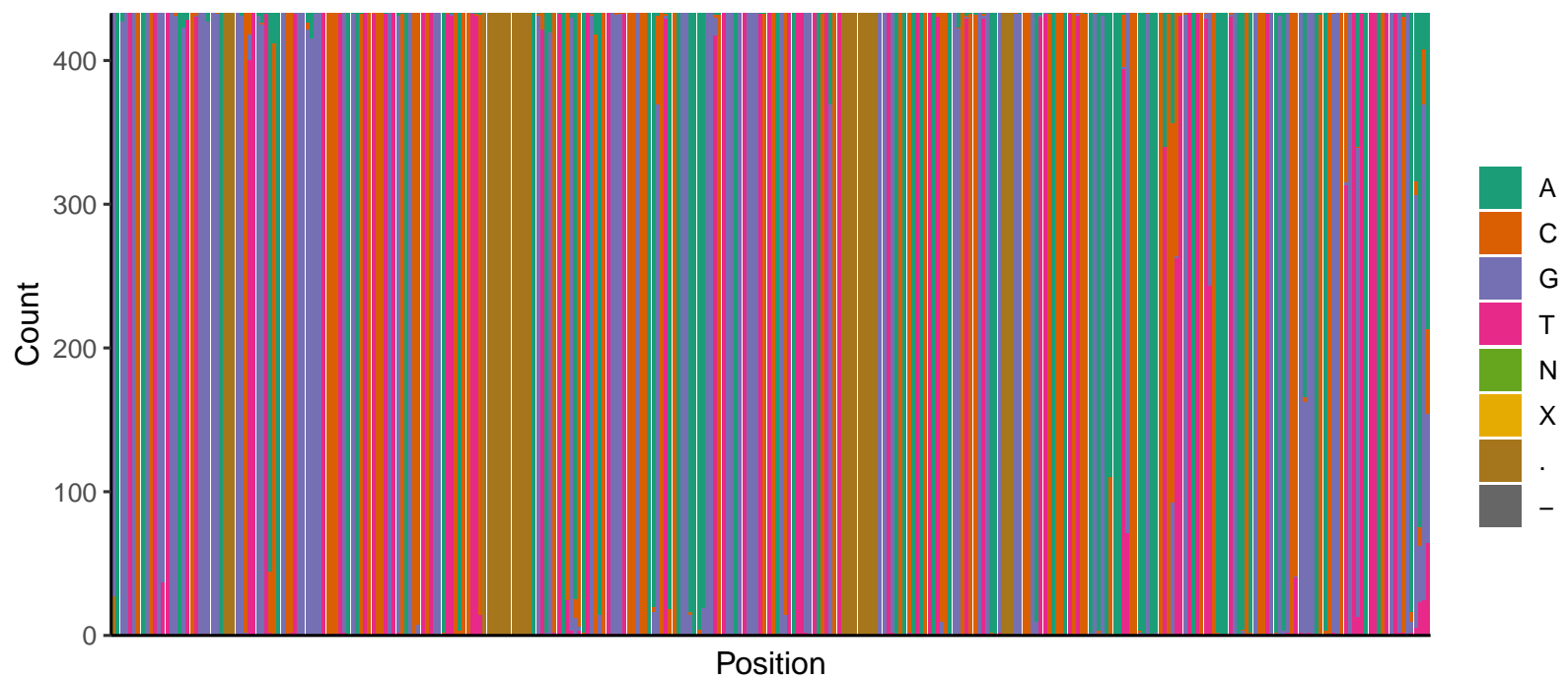




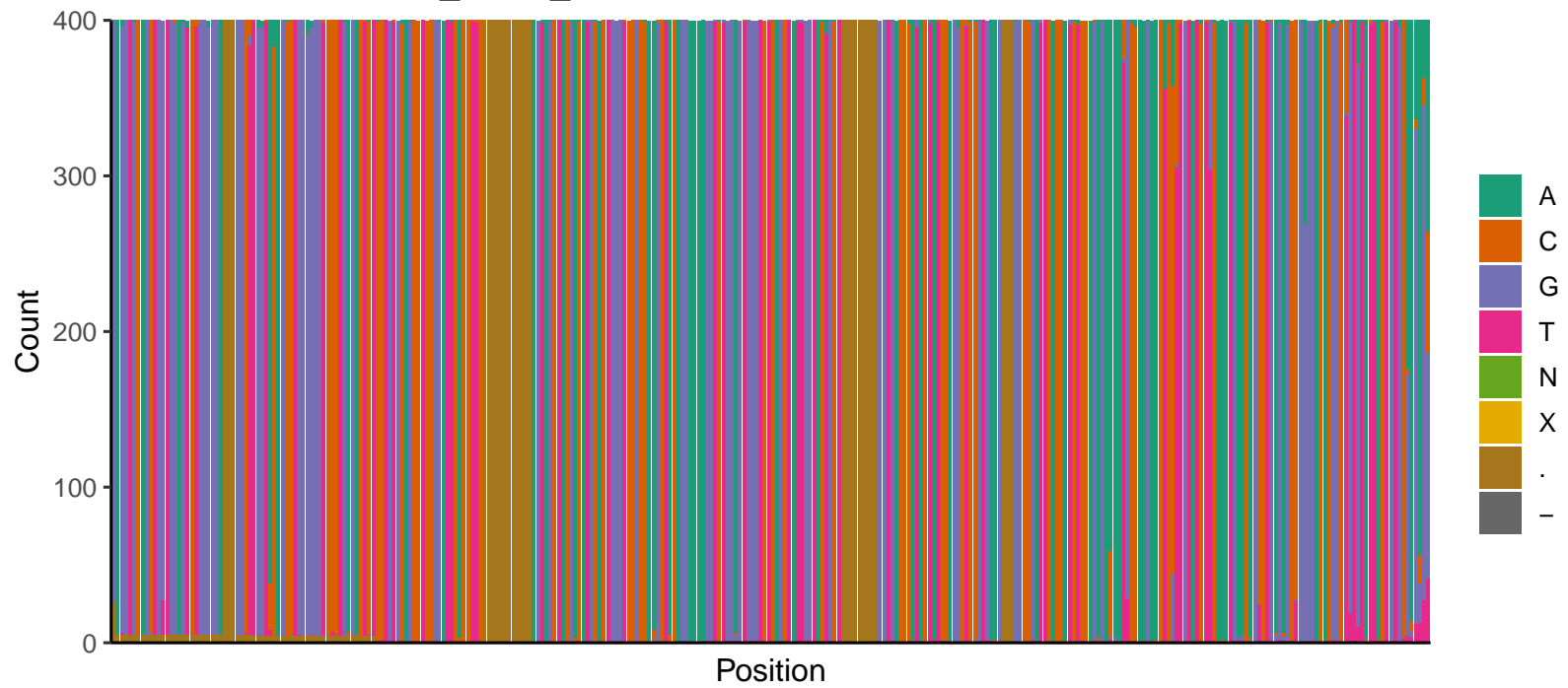
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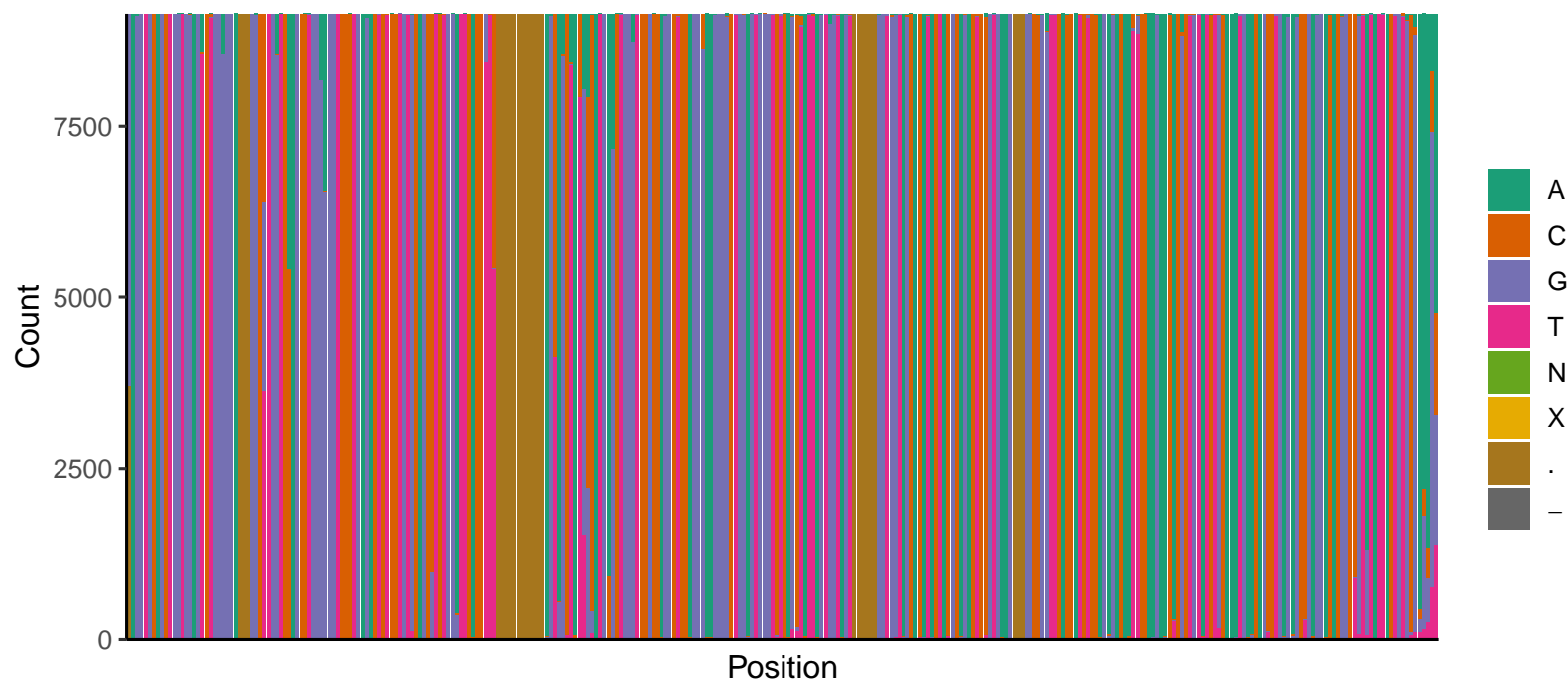
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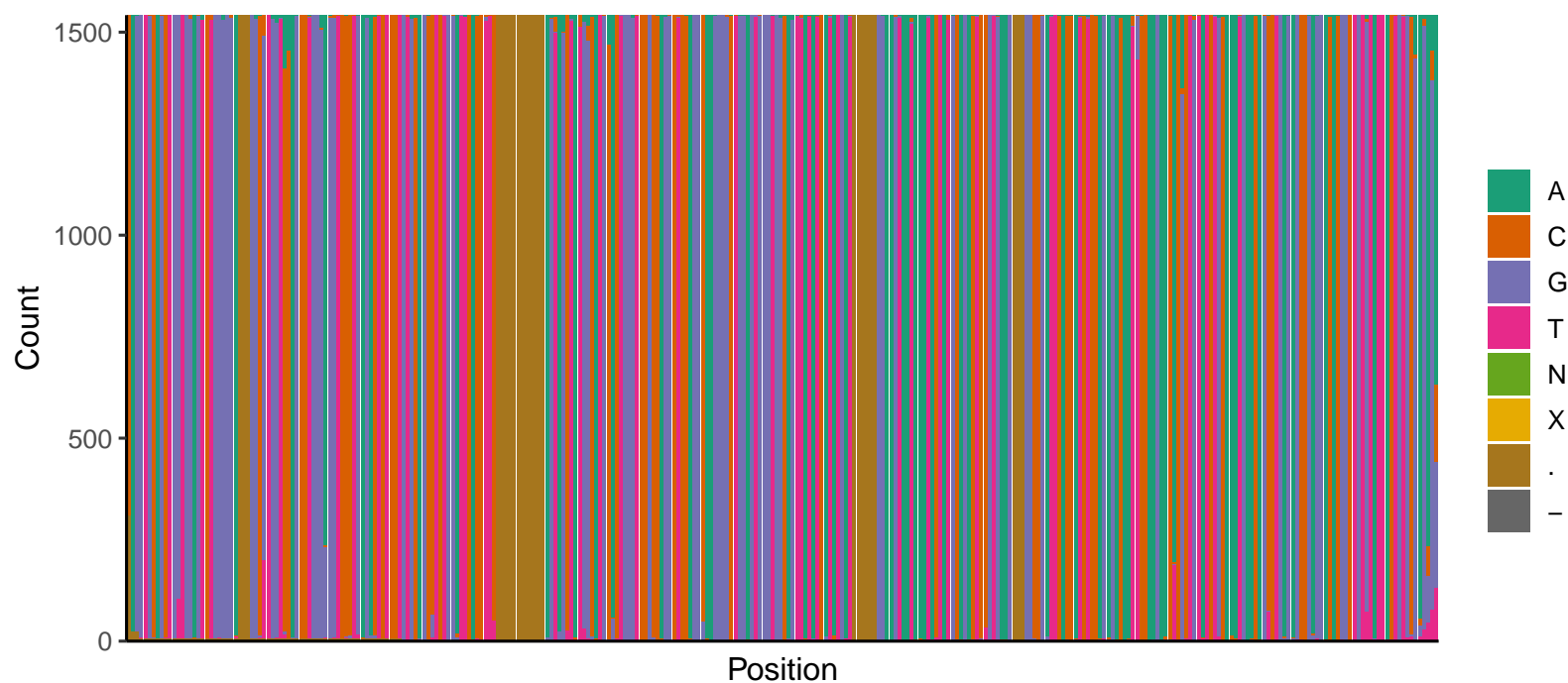
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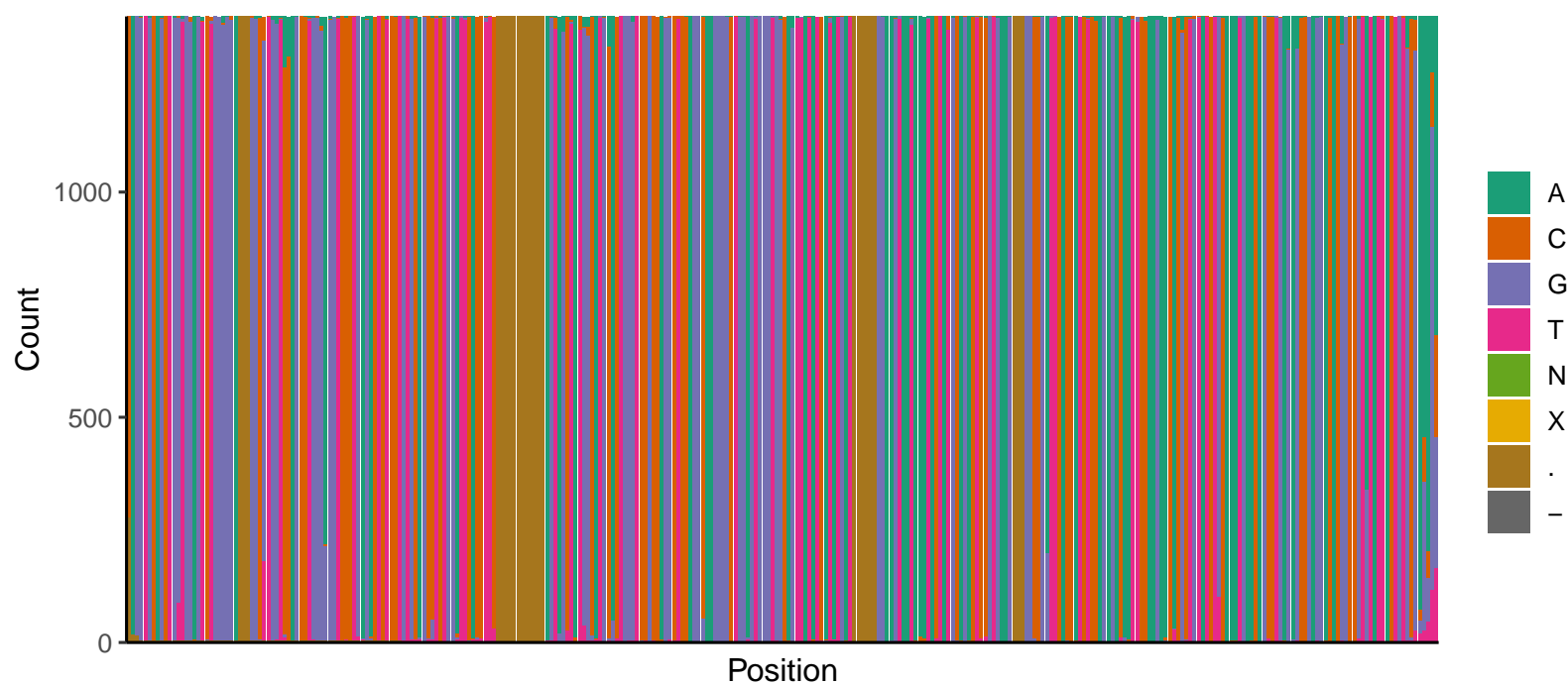
Gene IGHV3-23\*04\_A39C



Gene IGHV3-30\*03\_T288C



Gene IGHV3-30\*03\_T288C\_T300C



Gene IGHV3-33\*03\_T247G\_A256T\_G258A\_A317G



Gene IGHV3-48\*03\_T303G



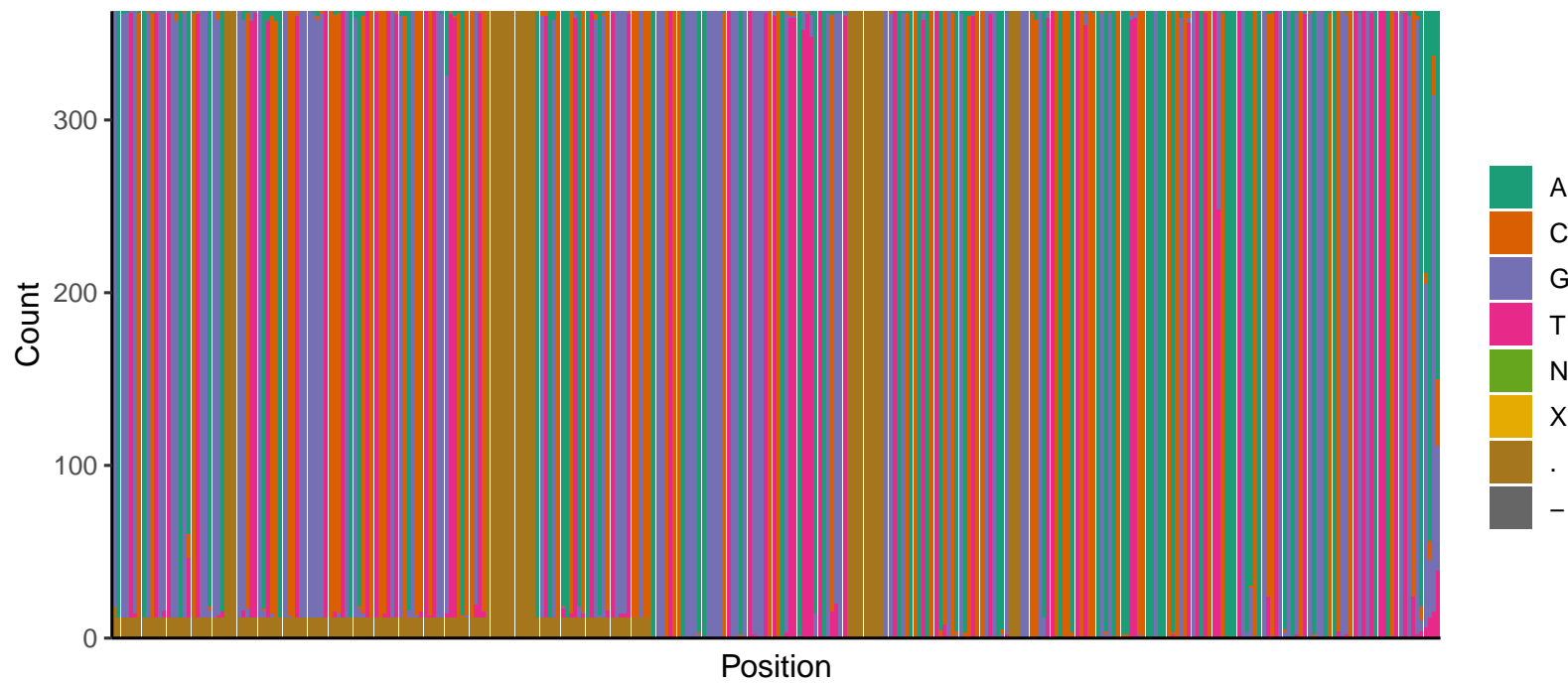
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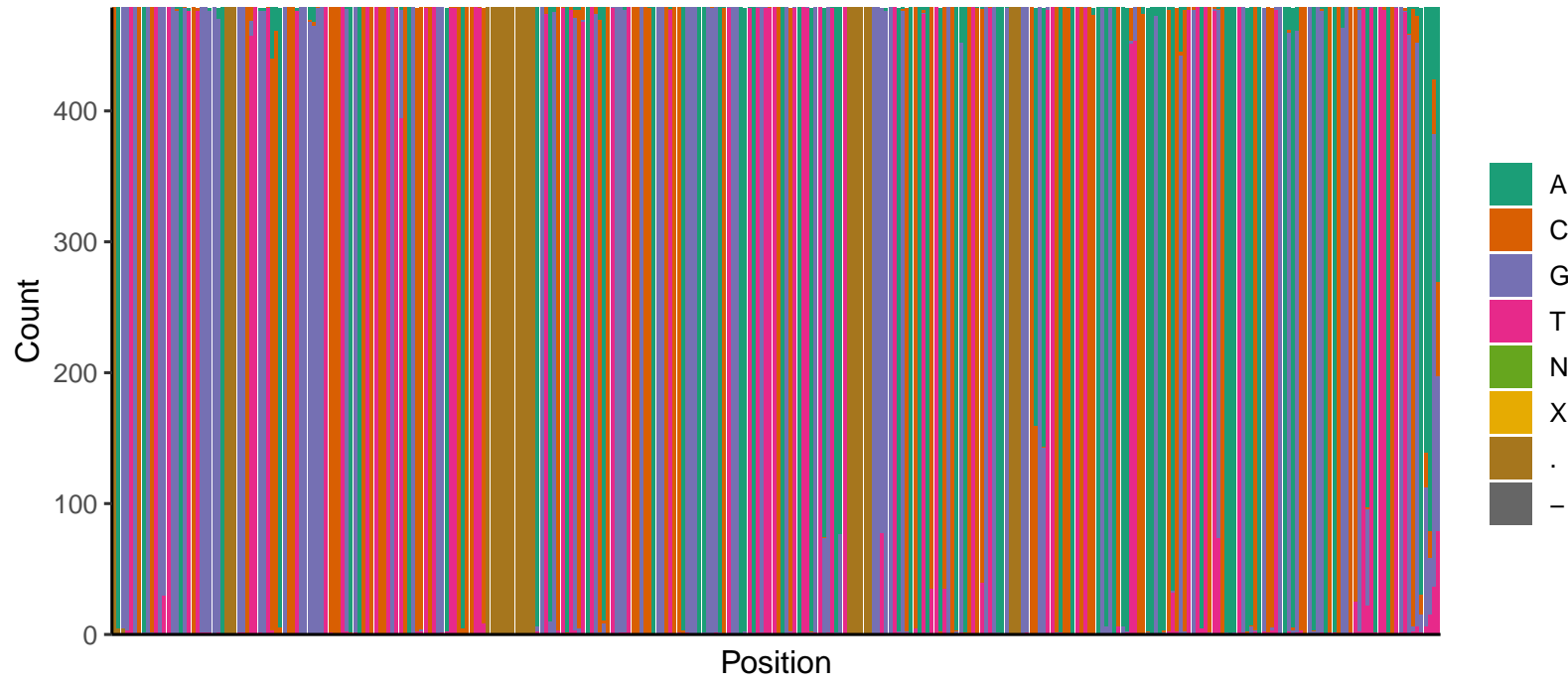
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Gene IGHV3-53\*05\_C300T



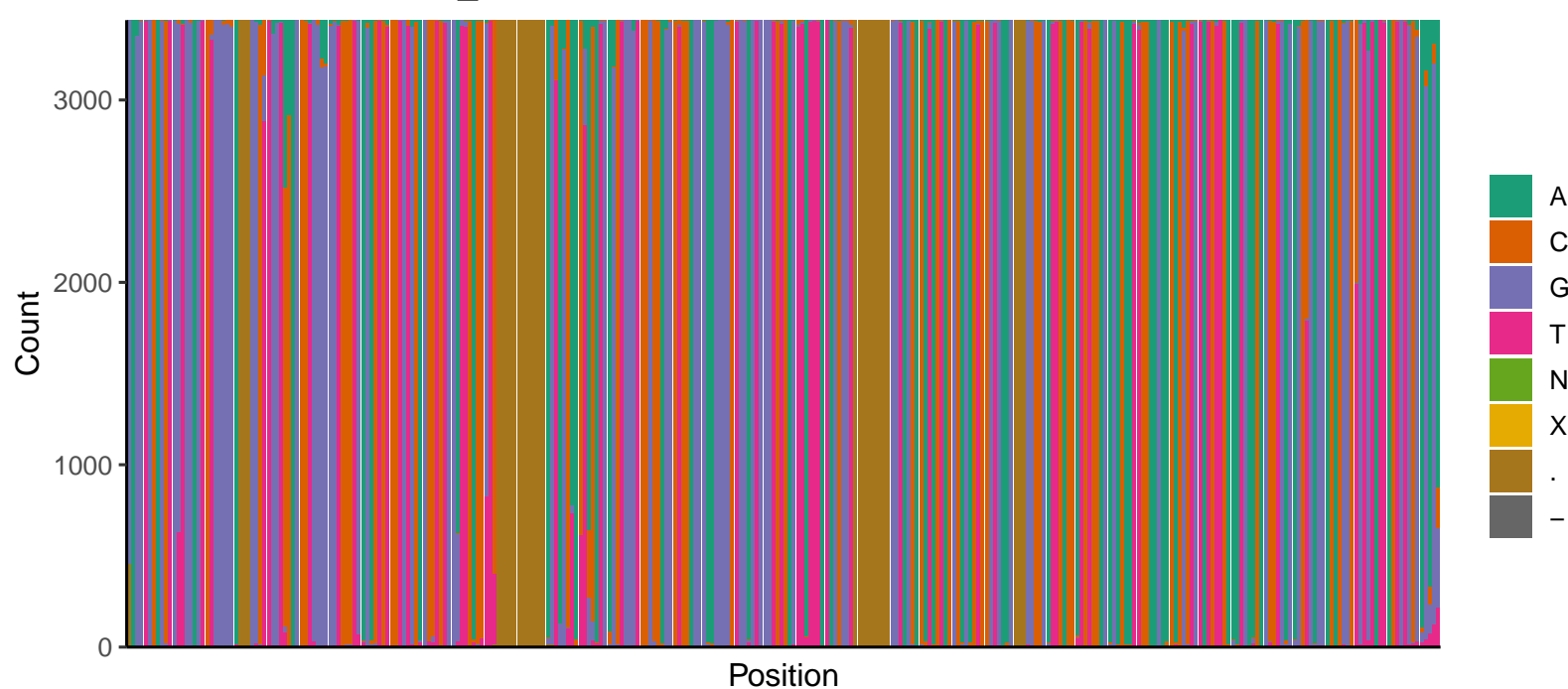
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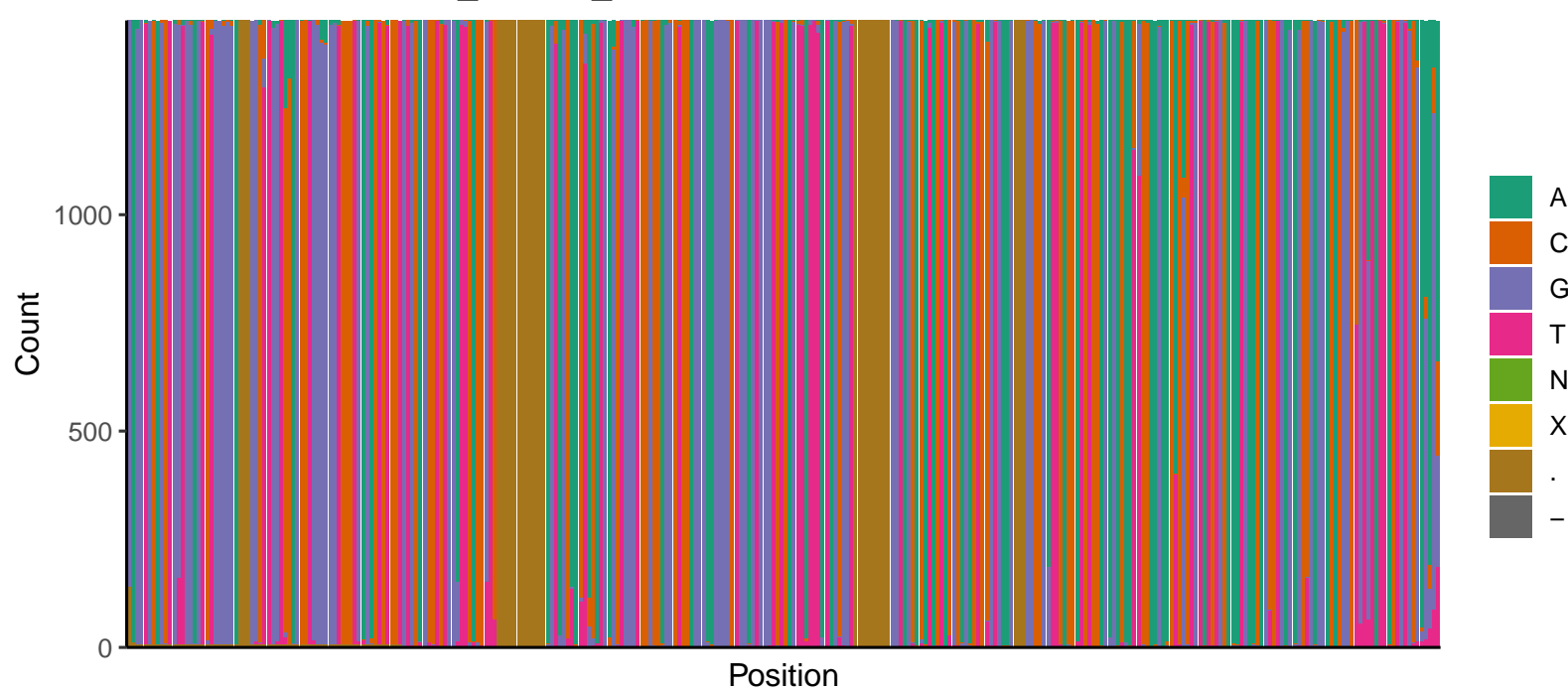
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Gene IGHV3-66\*01\_A223C



Gene IGHV3-66\*01\_A223C\_T267G



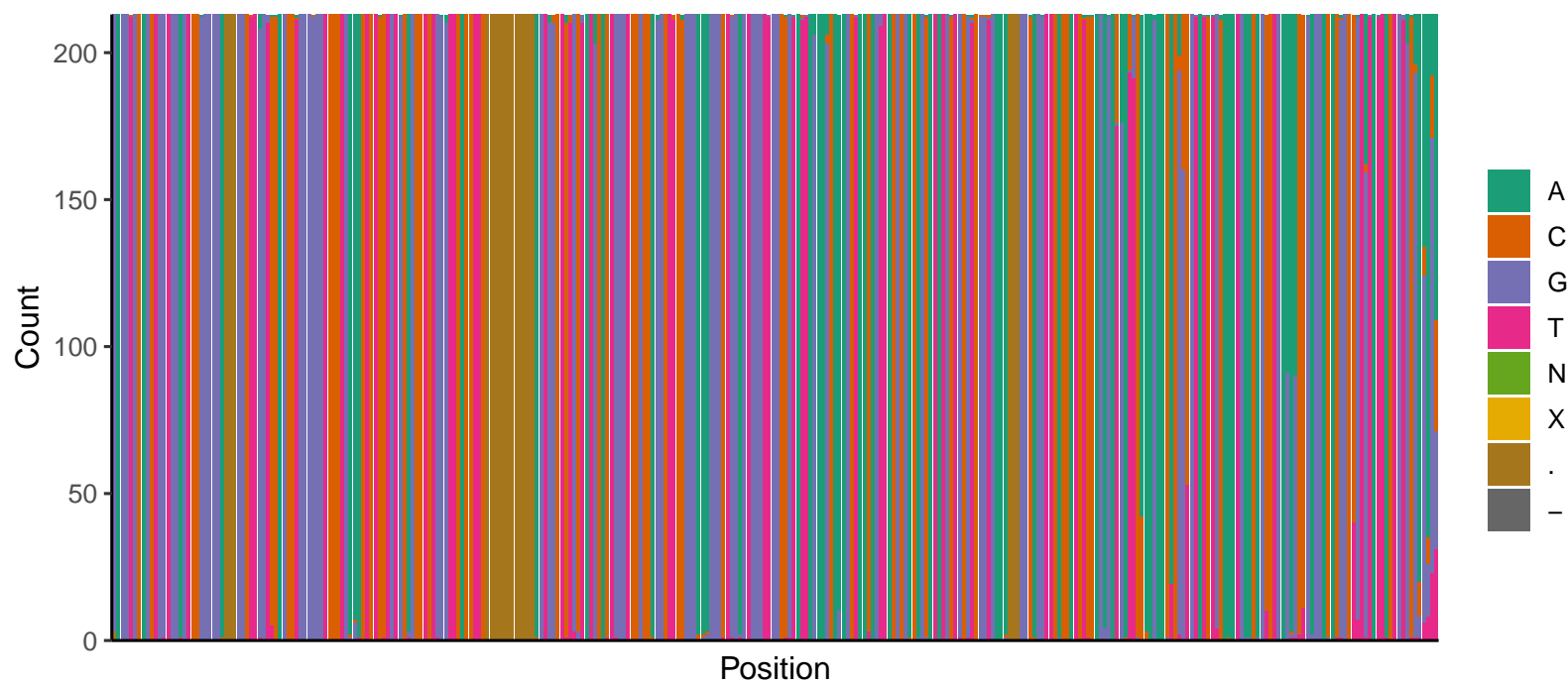
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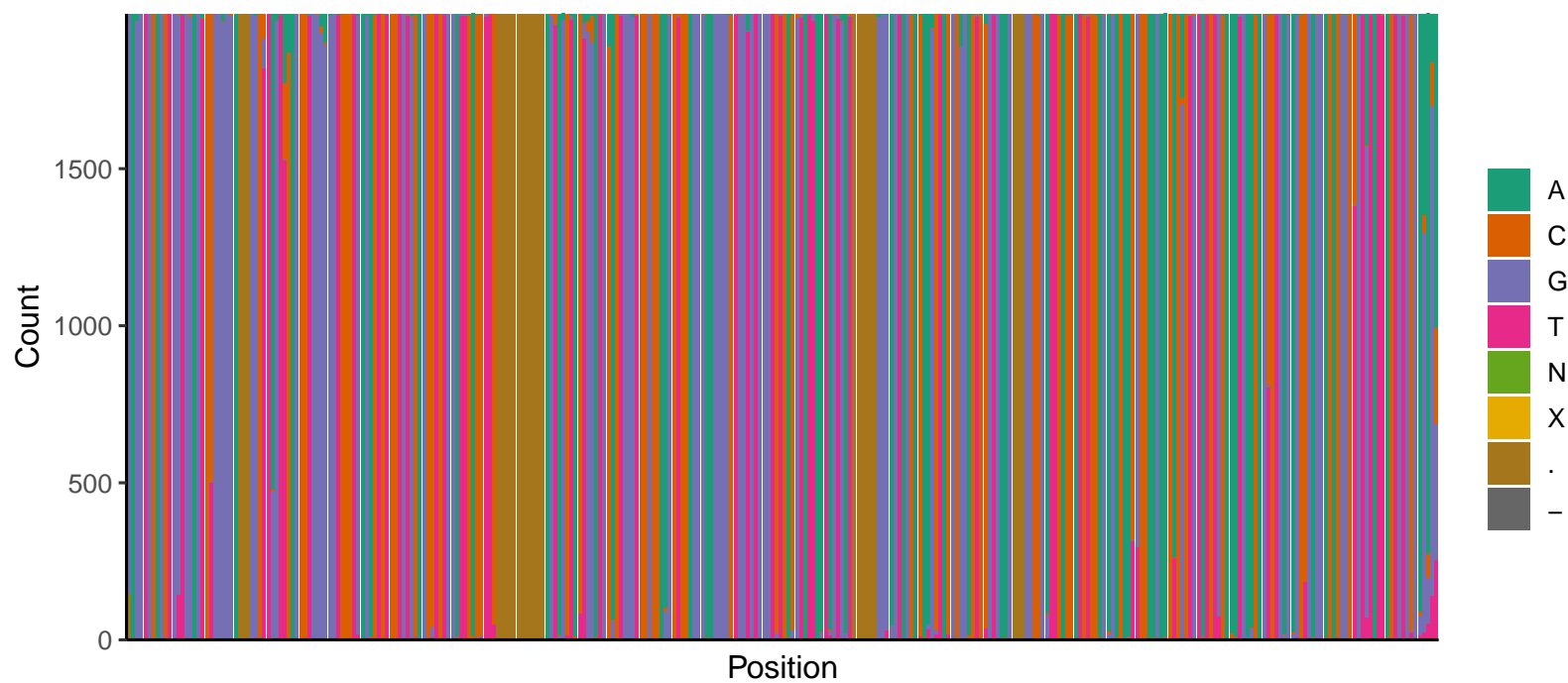
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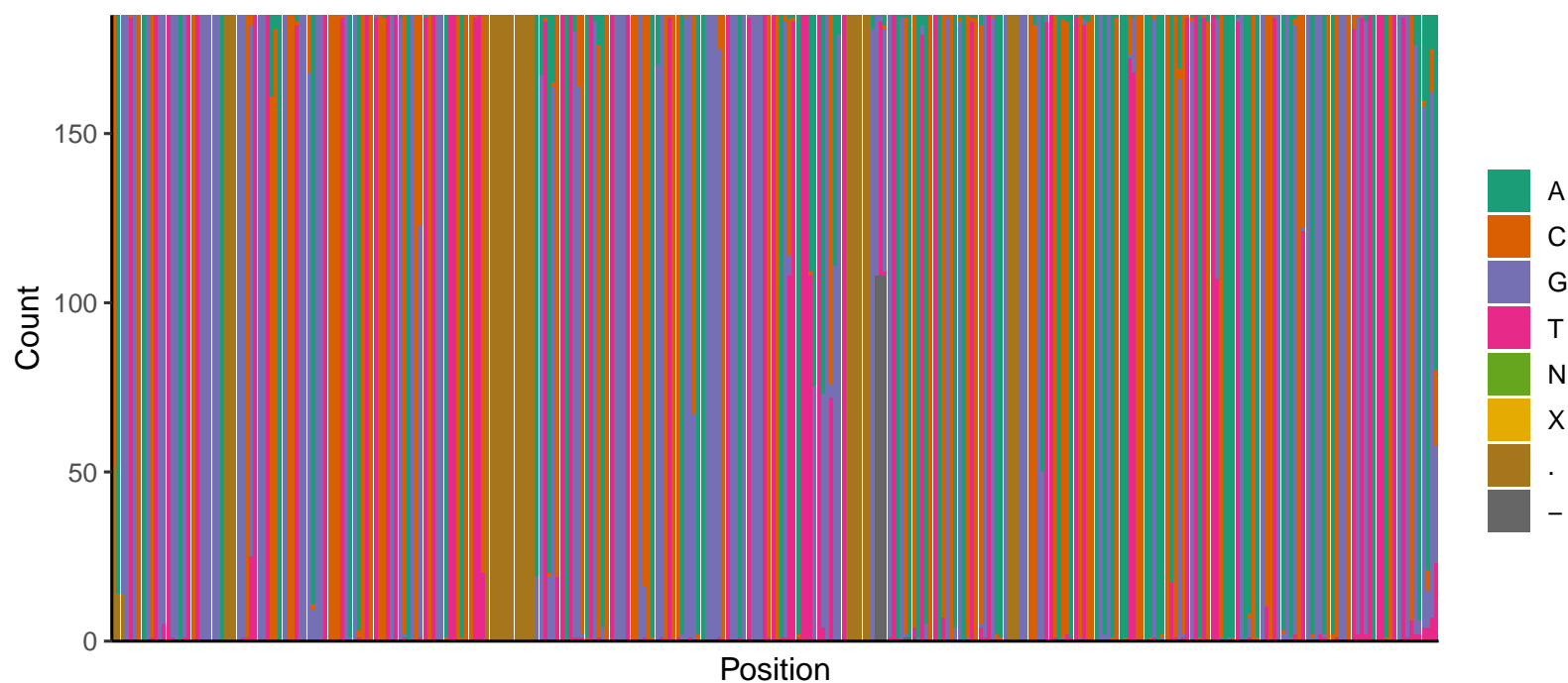
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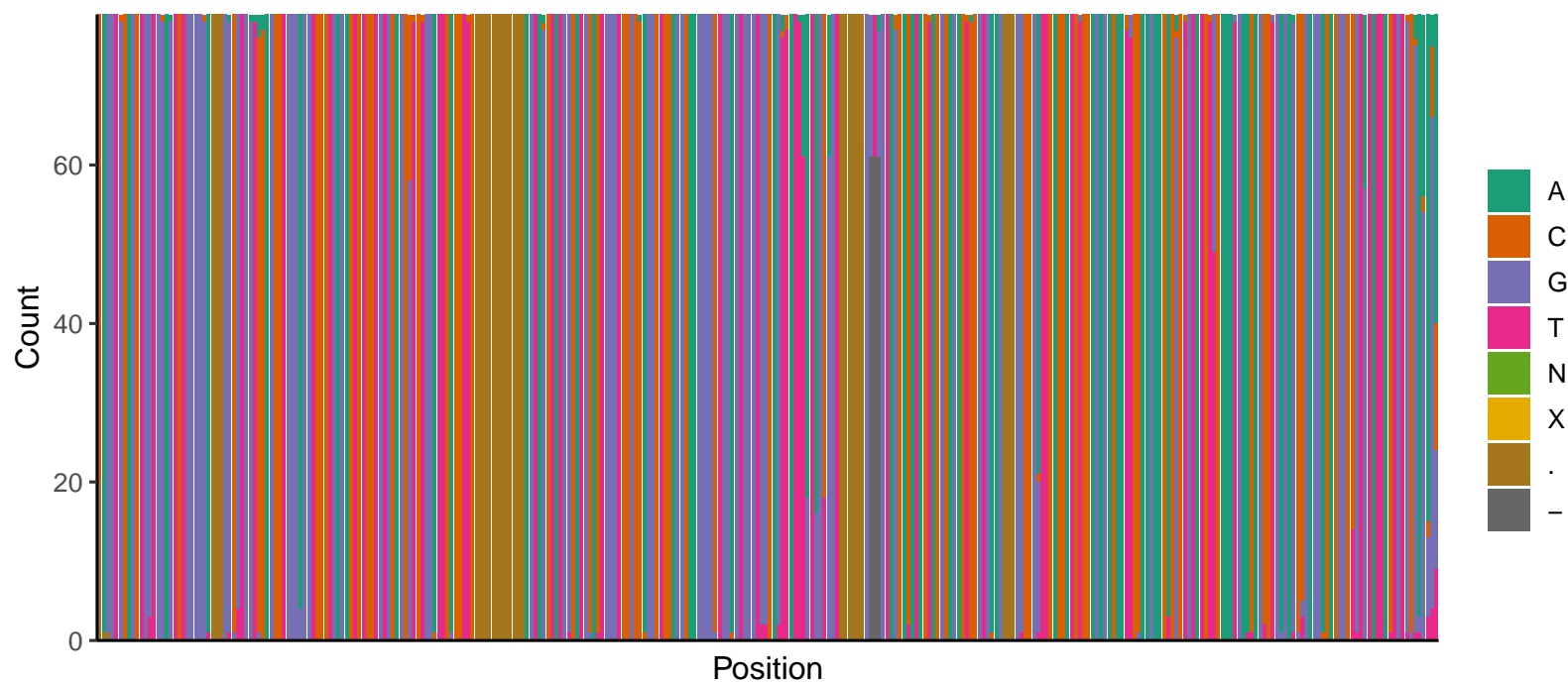
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Gene IGHV3-NL1\*01\_G49A\_T201C\_G267T\_A317G



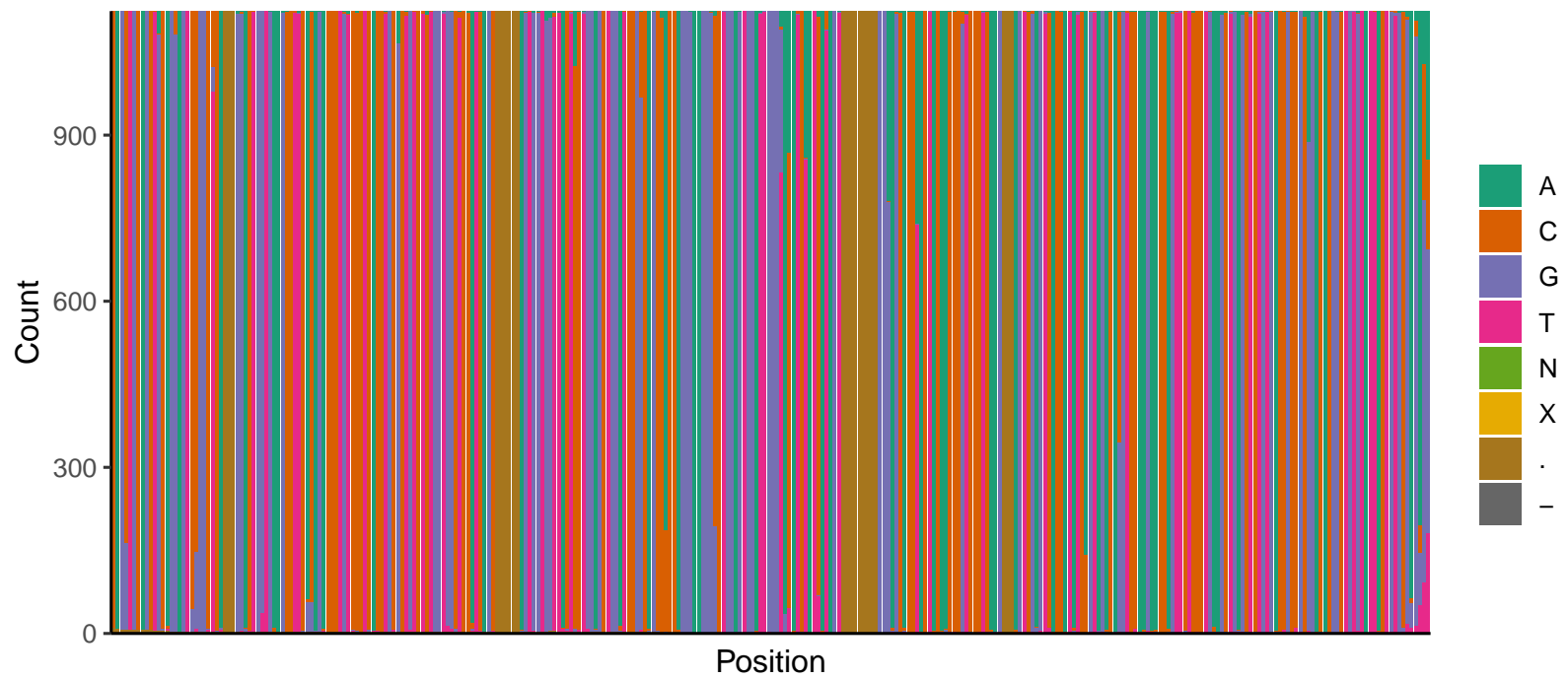
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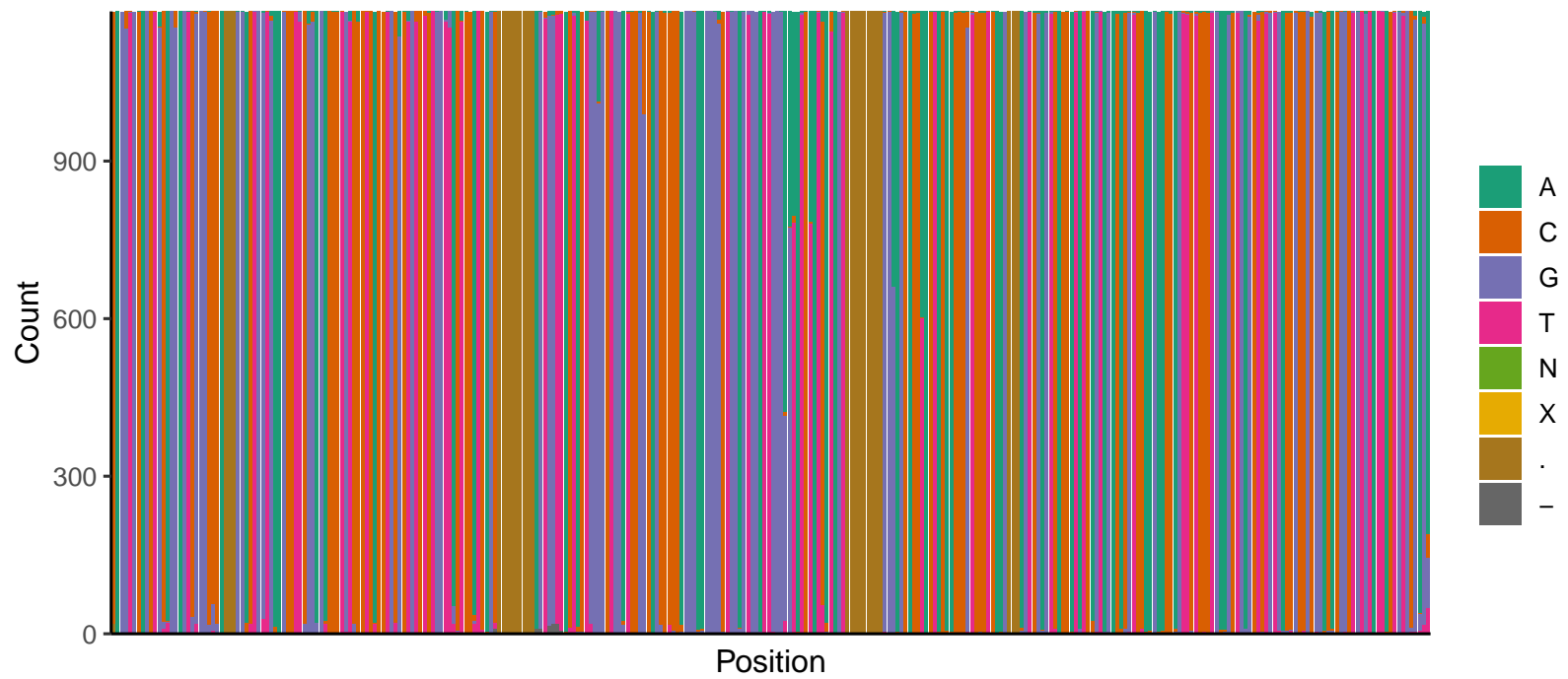
Gene IGHV4-30-2\*01\_C315G



Gene IGHV4-30-2\*01\_C300T\_C315G



Gene IGHV4-38-2\*01\_A291G\_C300T





Gene IGHV4-38-2\*02\_A70G



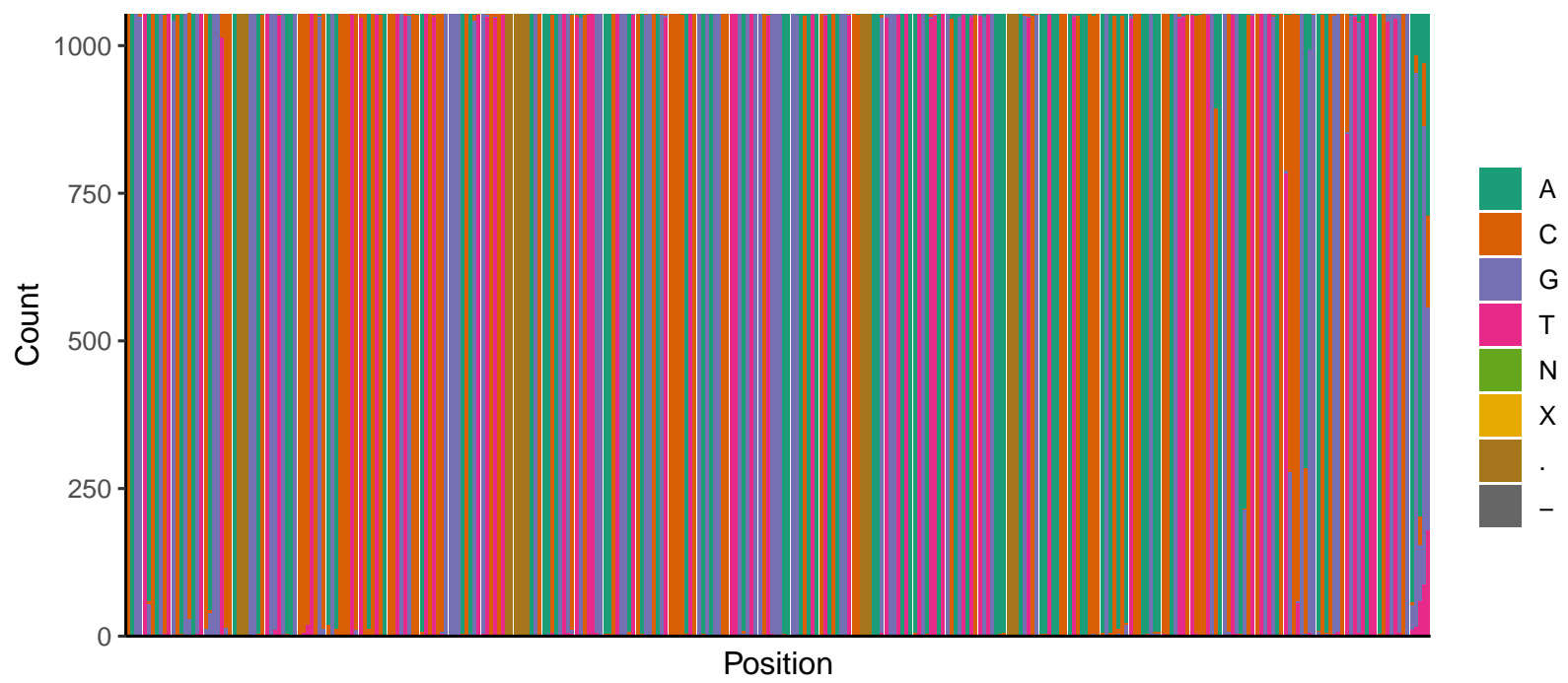
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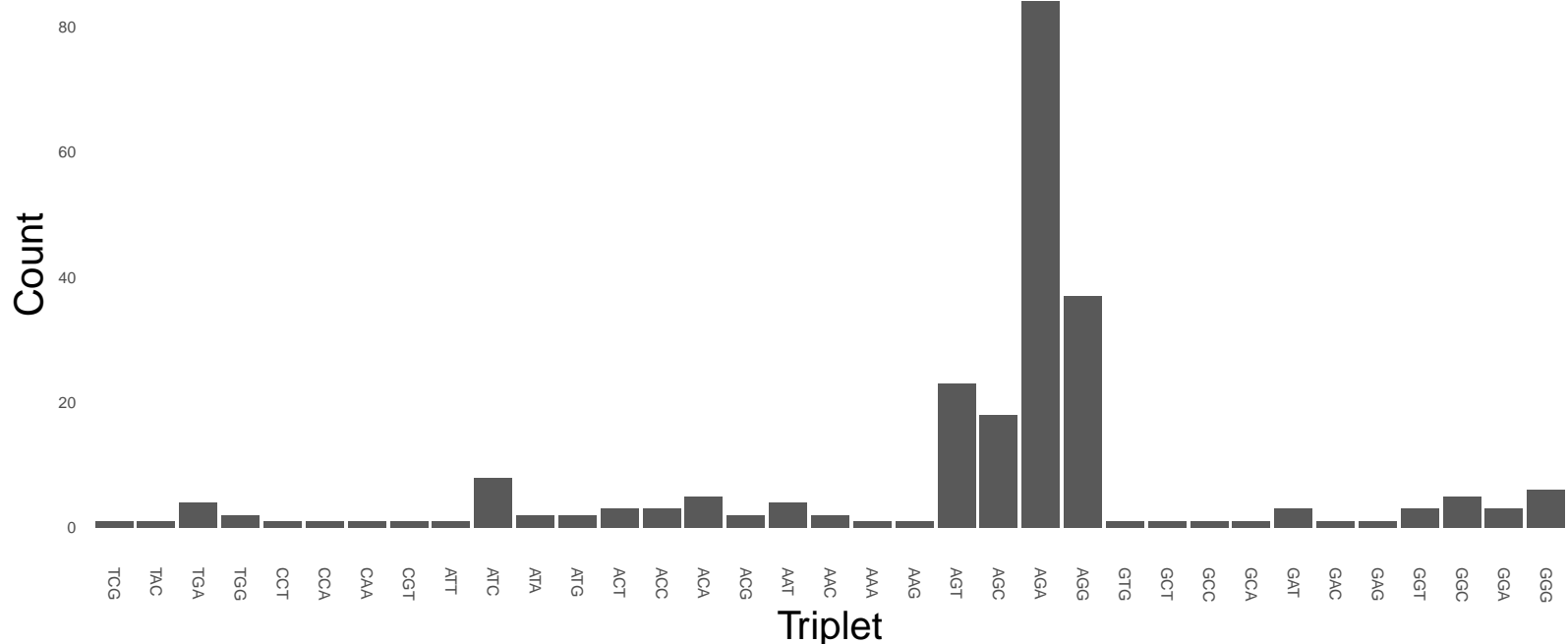
Gene IGHV4-59\*12\_C300T



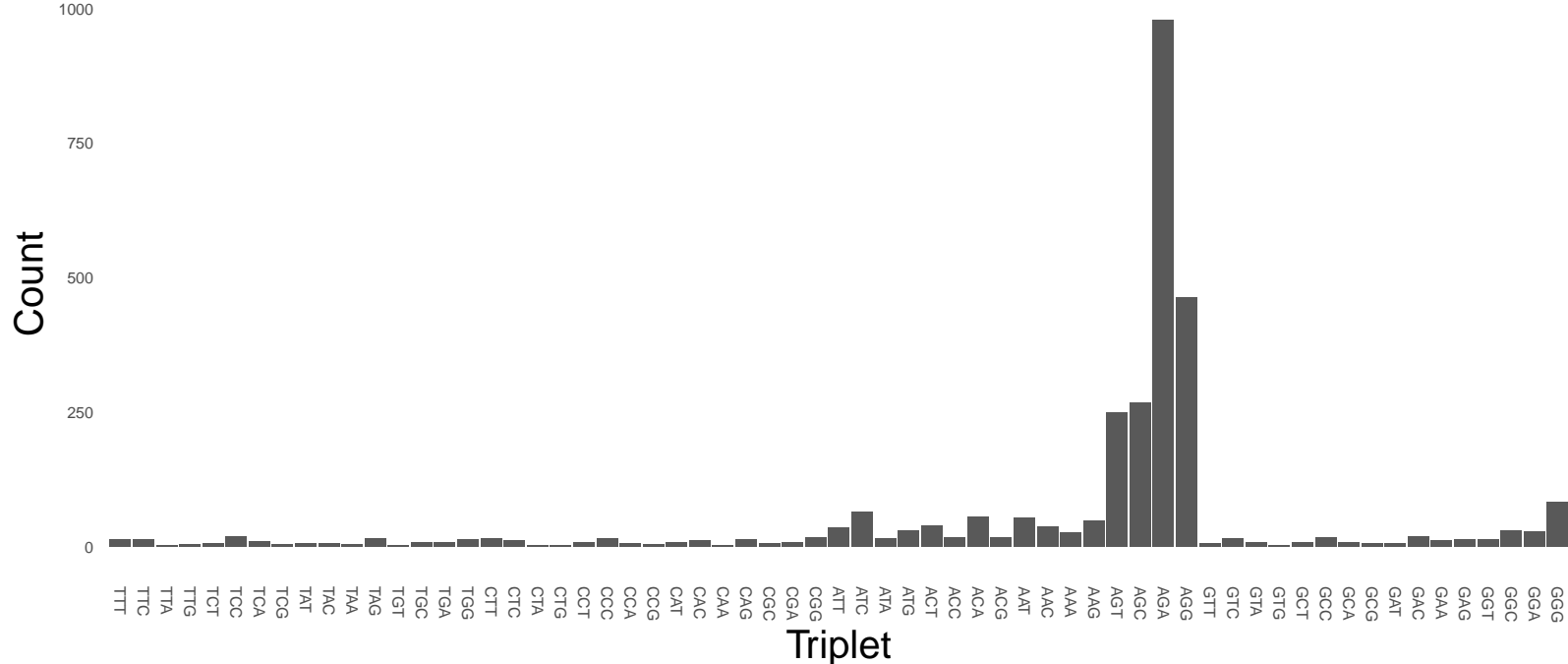
# Gene IGHV6-1\*01\_A315G



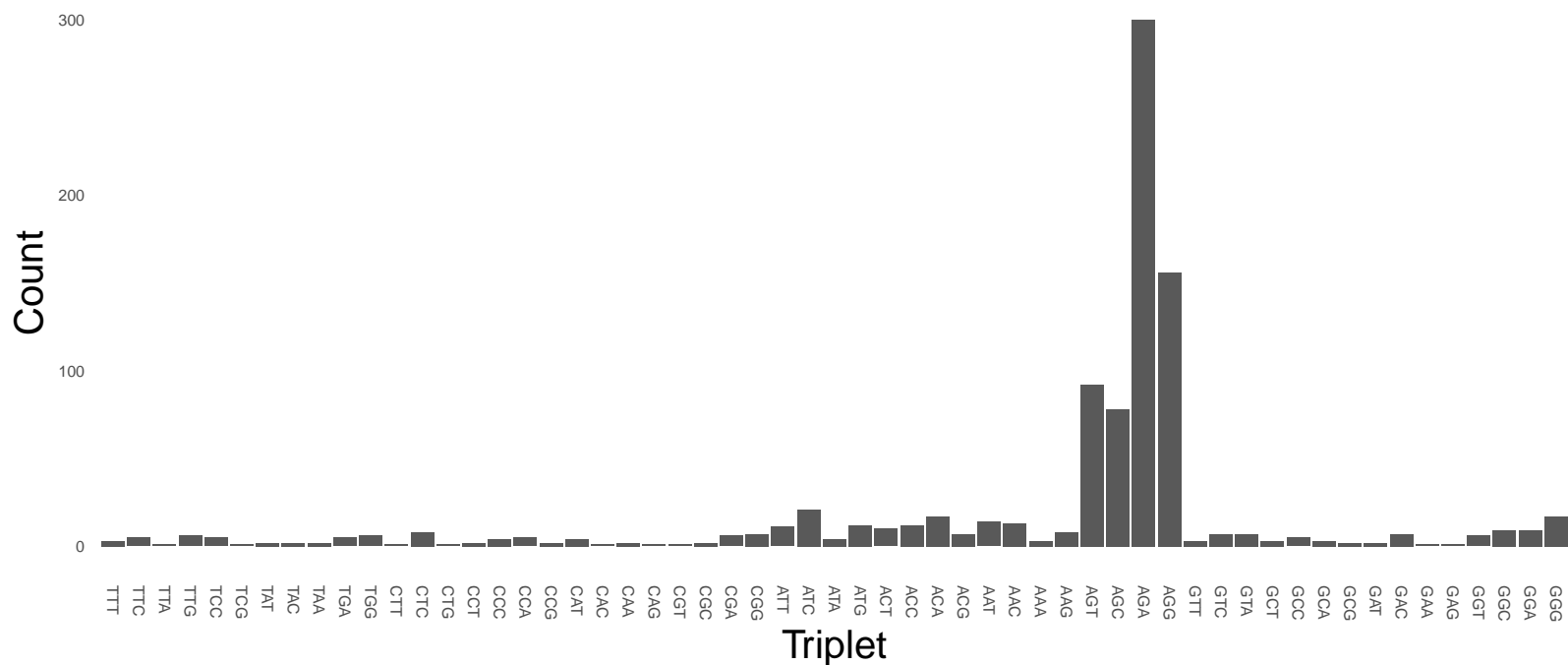
IGHV1-3\*02\_T296C\_T300C- Final 3 nucleotides as a triplet



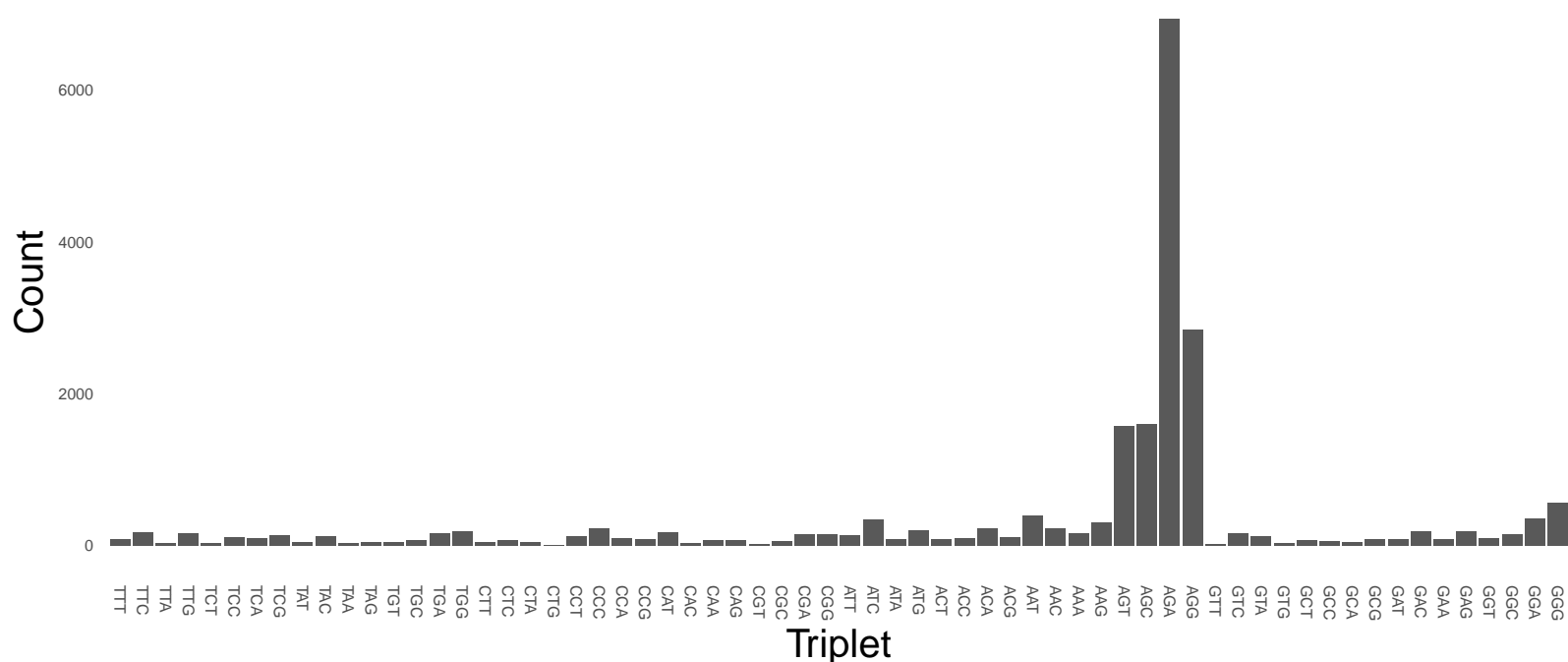
IGHV1-24\*01\_A315G\_C317G- Final 3 nucleotides as a triplet



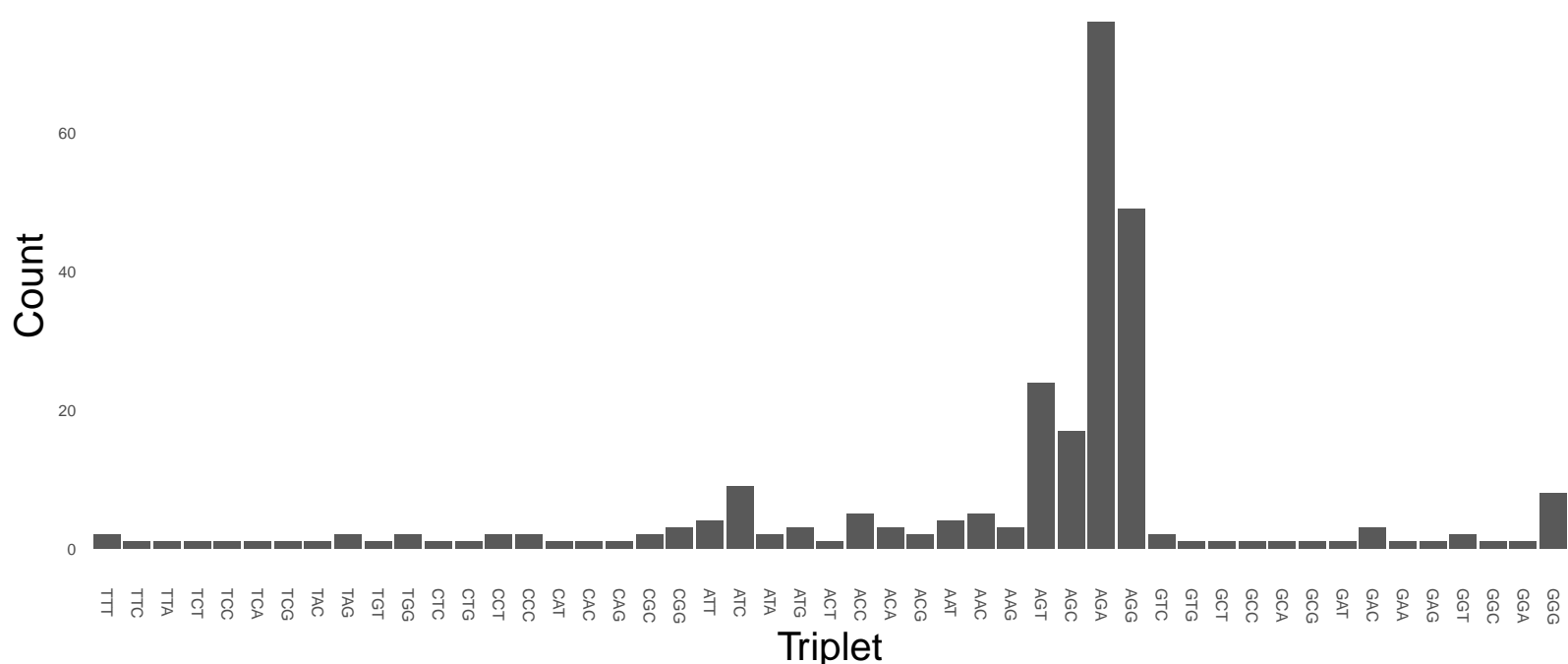
IGHV1-58\*01\_G316A\_C317G- Final 3 nucleotides as a triplet



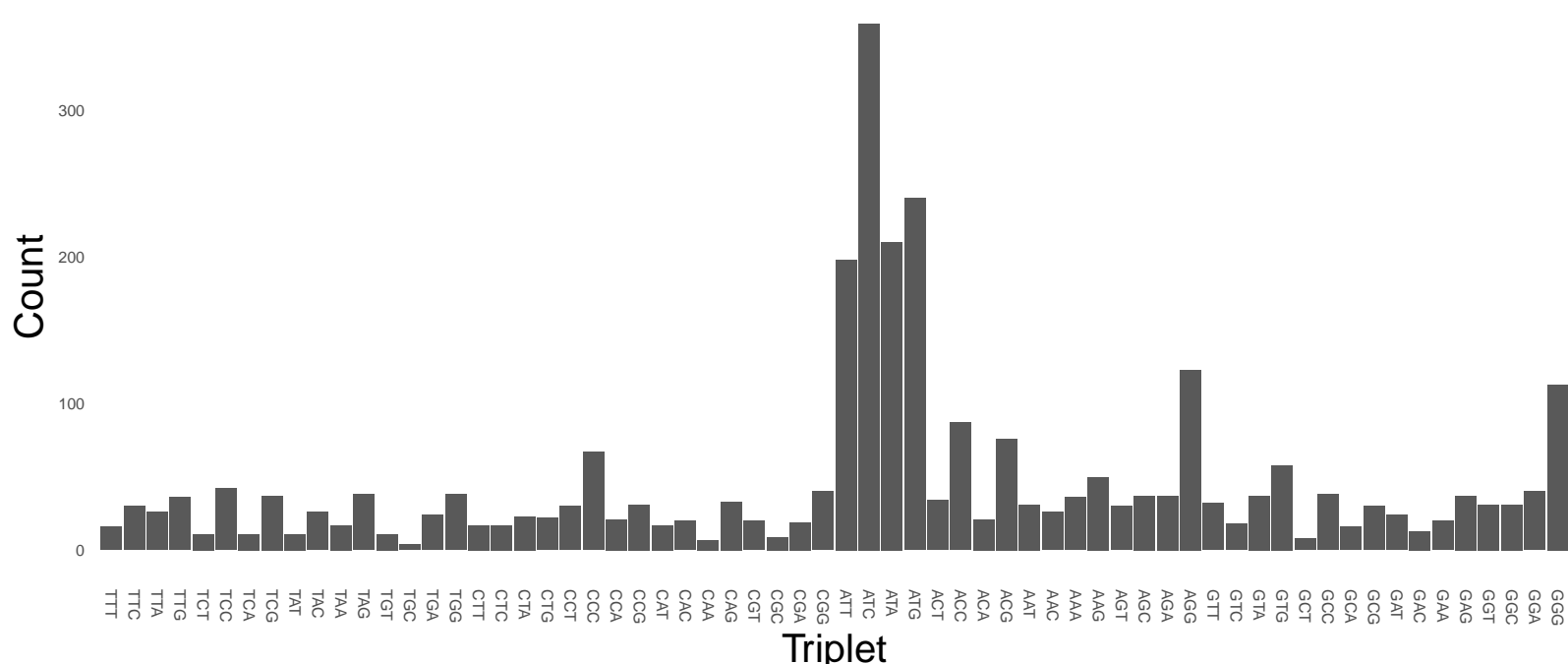
IGHV1-69\*08\_C191T- Final 3 nucleotides as a triplet



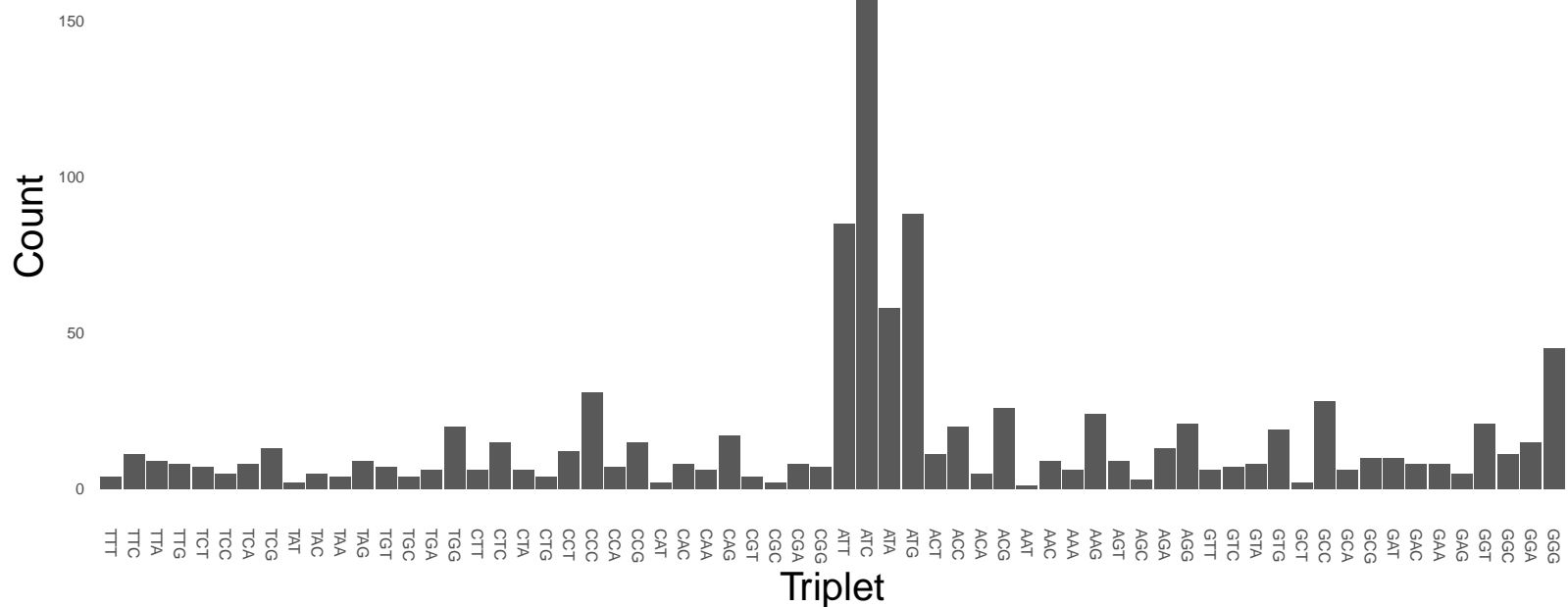
IGHV1-69-2\*01\_A315G\_C317G- Final 3 nucleotides as a triplet



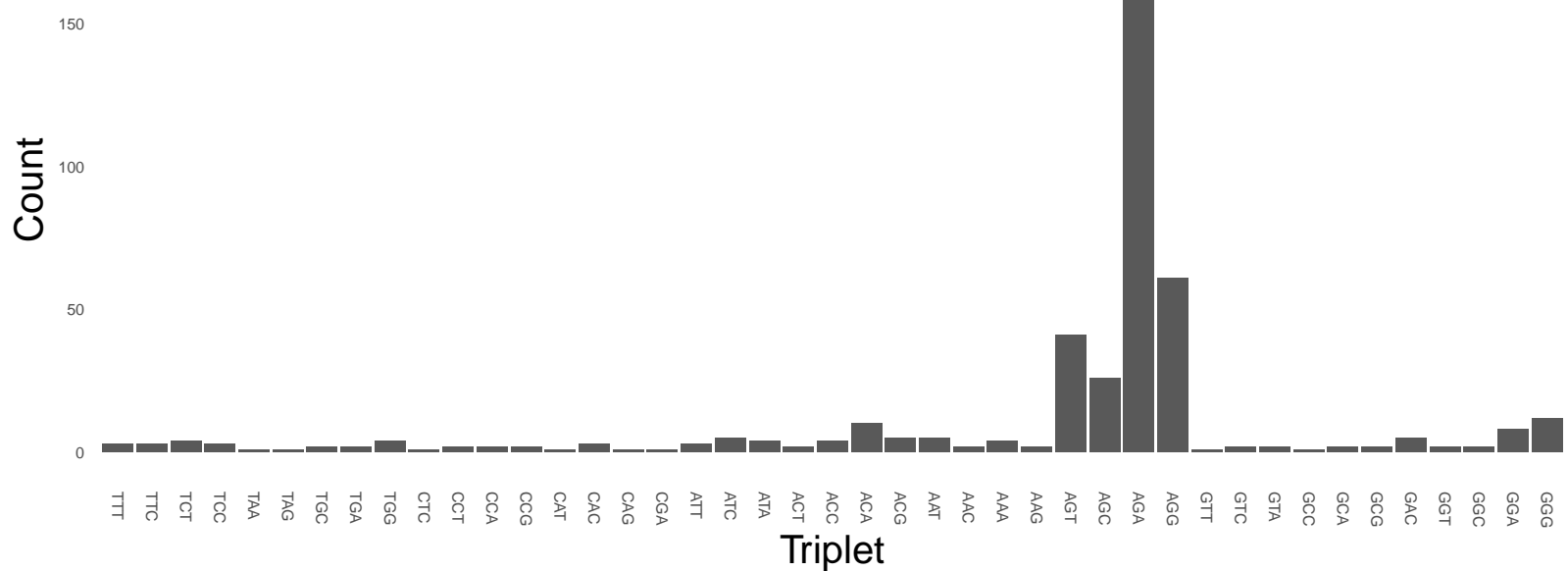
IGHV3-9\*01\_T279C\_T288C\_C300T\_T301G\_A315G\_A317G- Final 3 nucleotides as a triplet



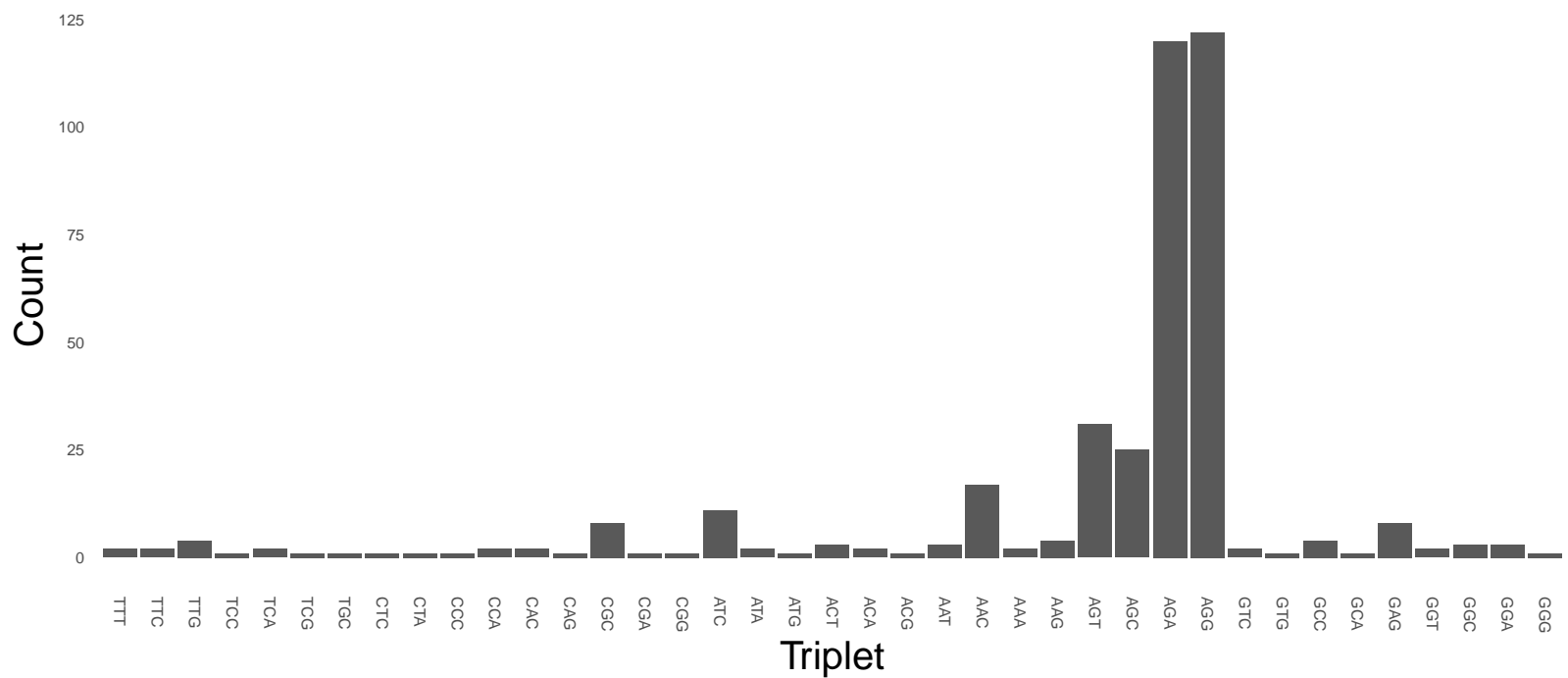
IGHV3-9\*01\_T279C\_T288C\_T301G\_G303A\_A315G- Final 3 nucleotides as a triplet



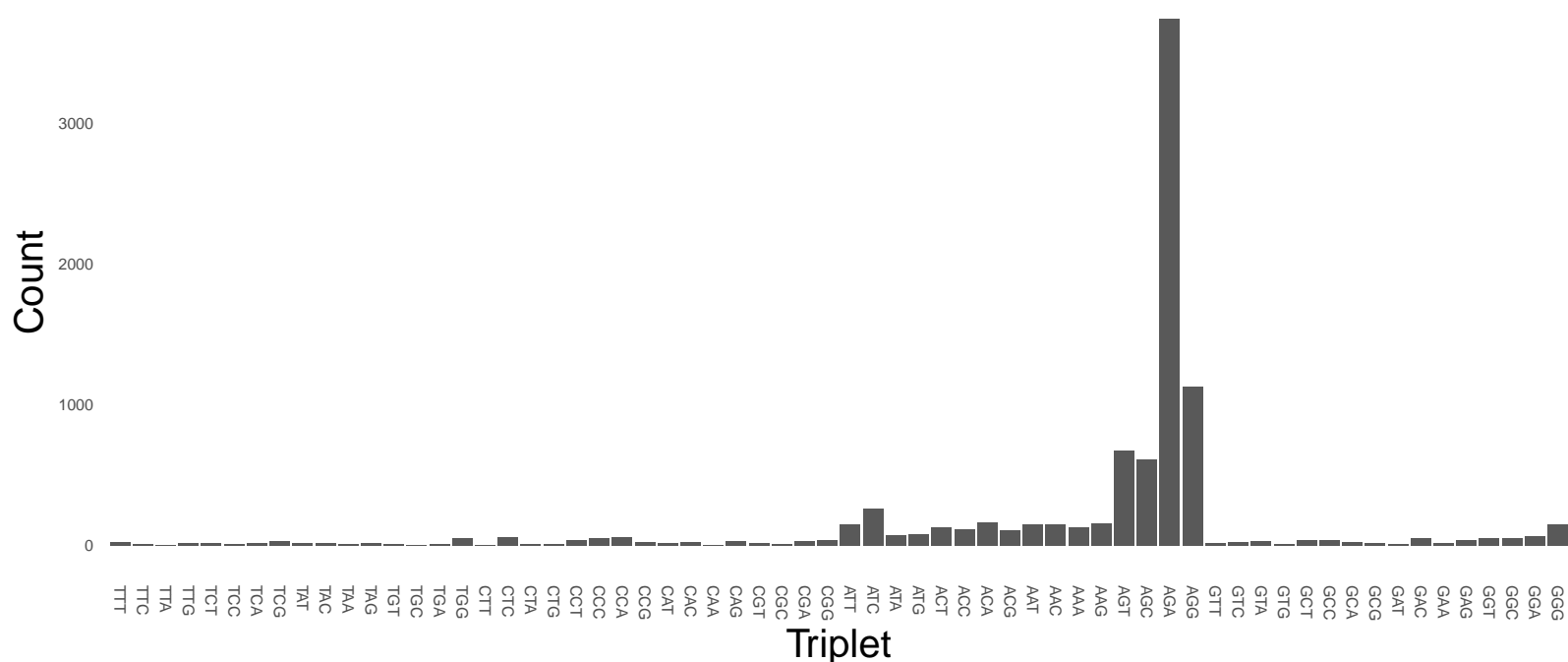
### IGHV3-13\*01\_A315G- Final 3 nucleotides as a triplet



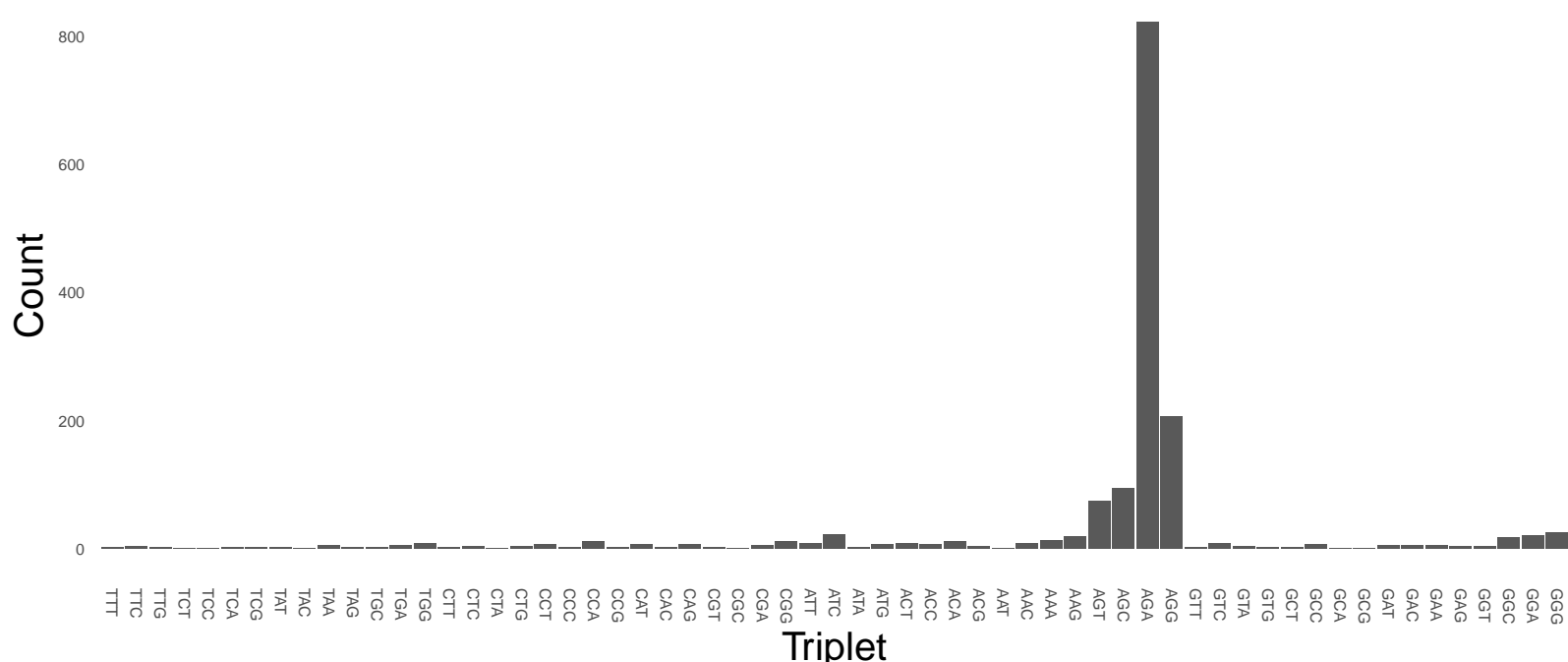
IGHV3-13\*05\_T78C\_A315G- Final 3 nucleotides as a triplet



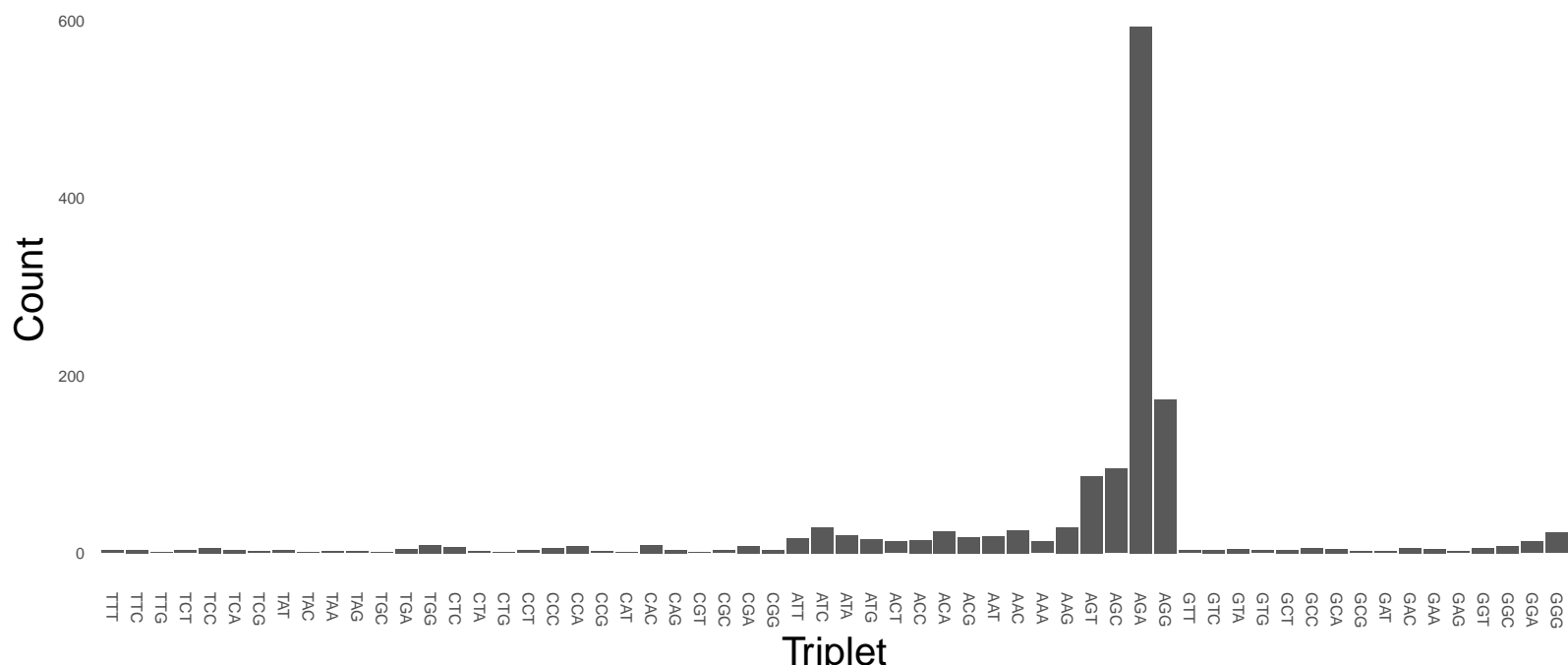
IGHV3-23\*04\_A39C- Final 3 nucleotides as a triplet



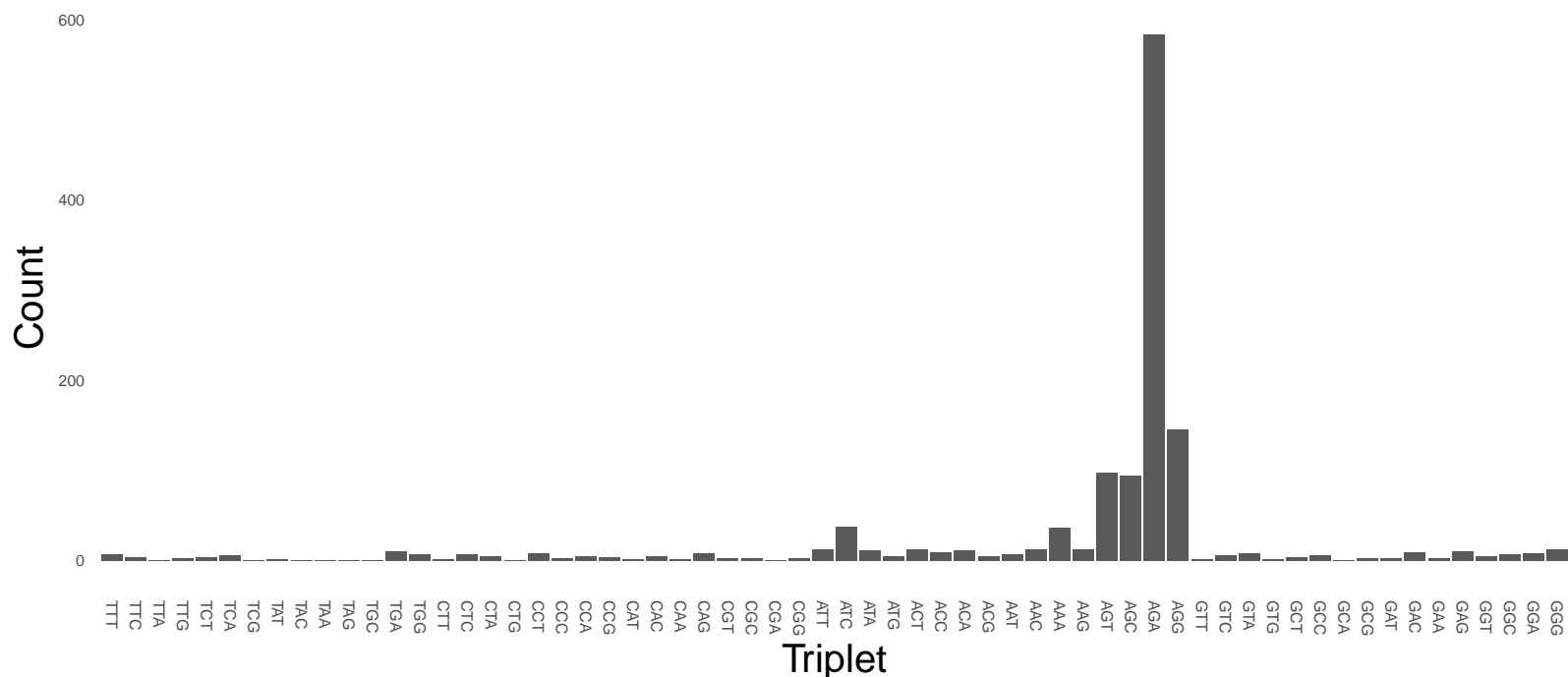
IGHV3-30\*03\_T288C- Final 3 nucleotides as a triplet



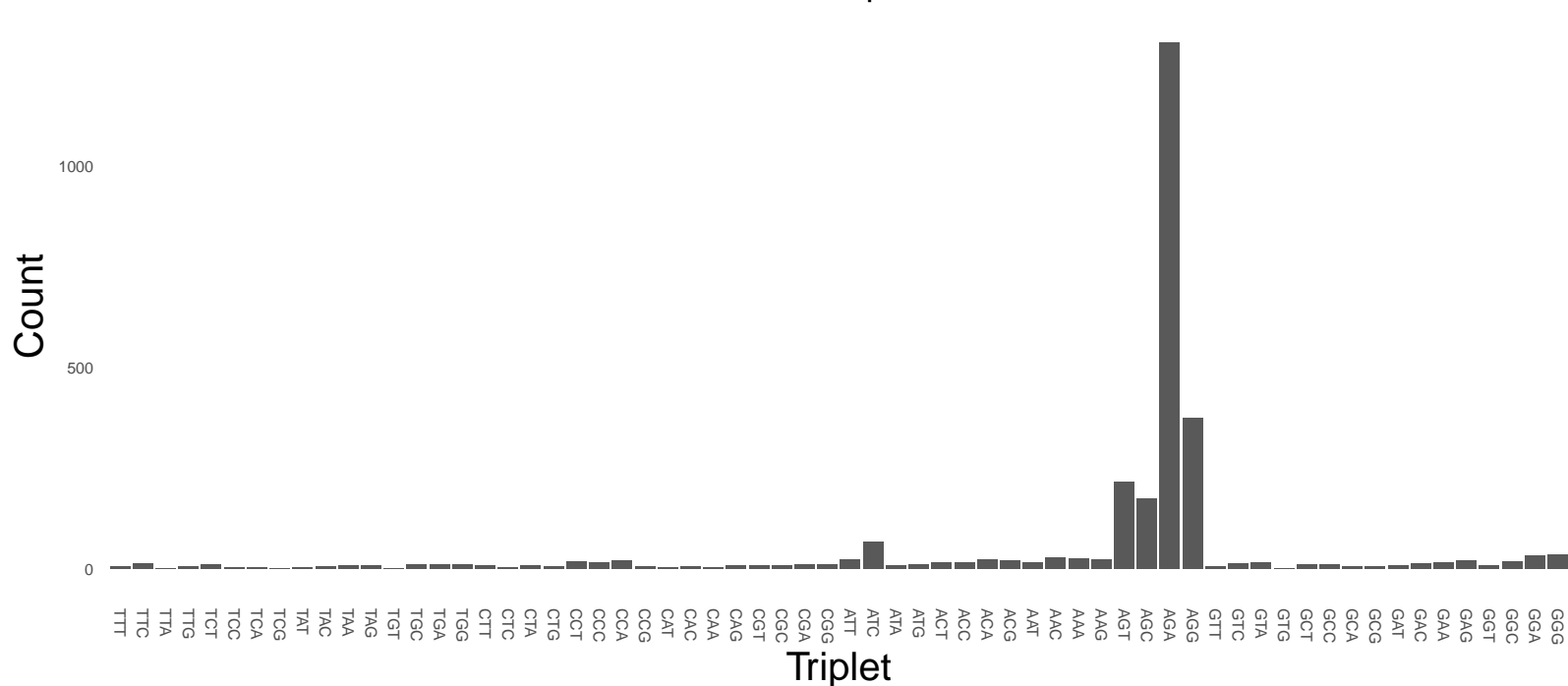
IGHV3-30\*03\_T288C\_T300C- Final 3 nucleotides as a triplet



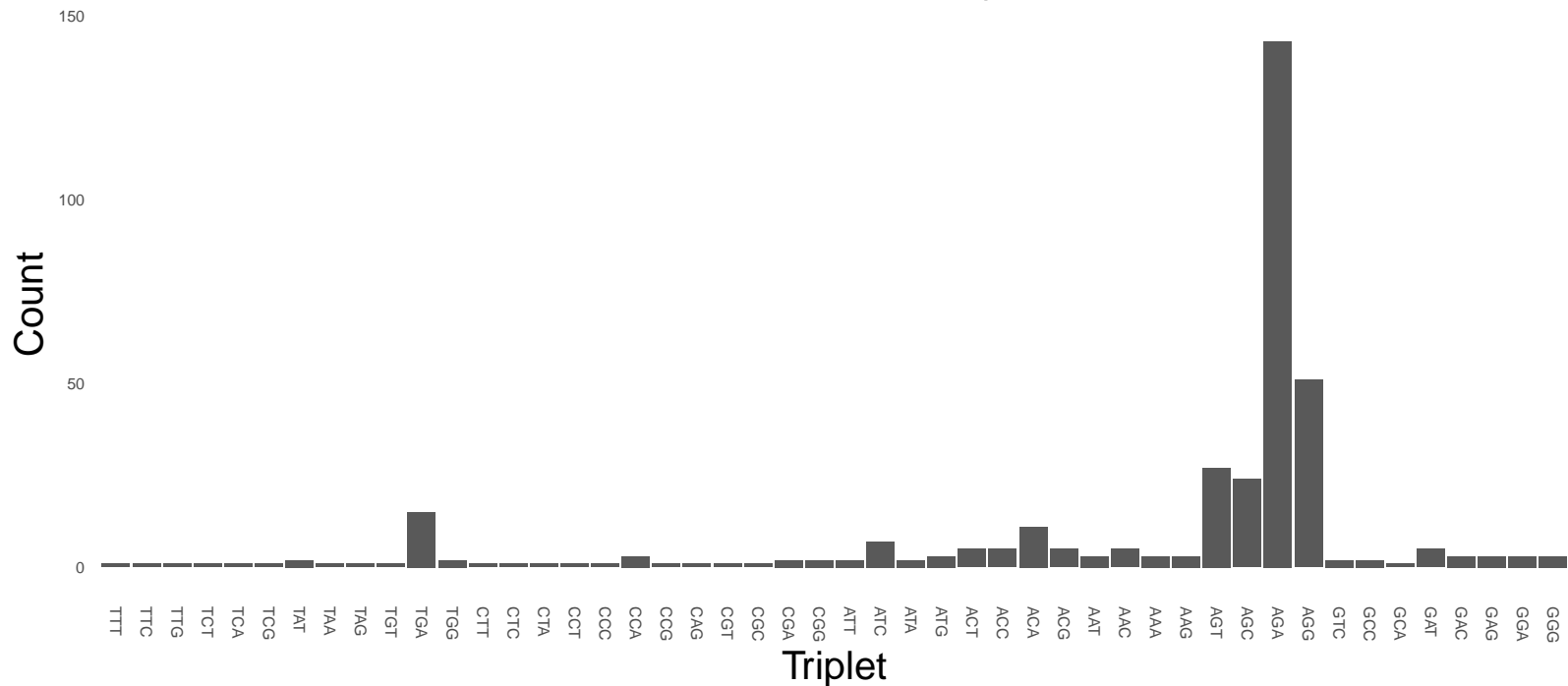
IGHV3-33\*03\_T247G\_A256T\_G258A\_A317G- Final 3 nucleotides as a triplet



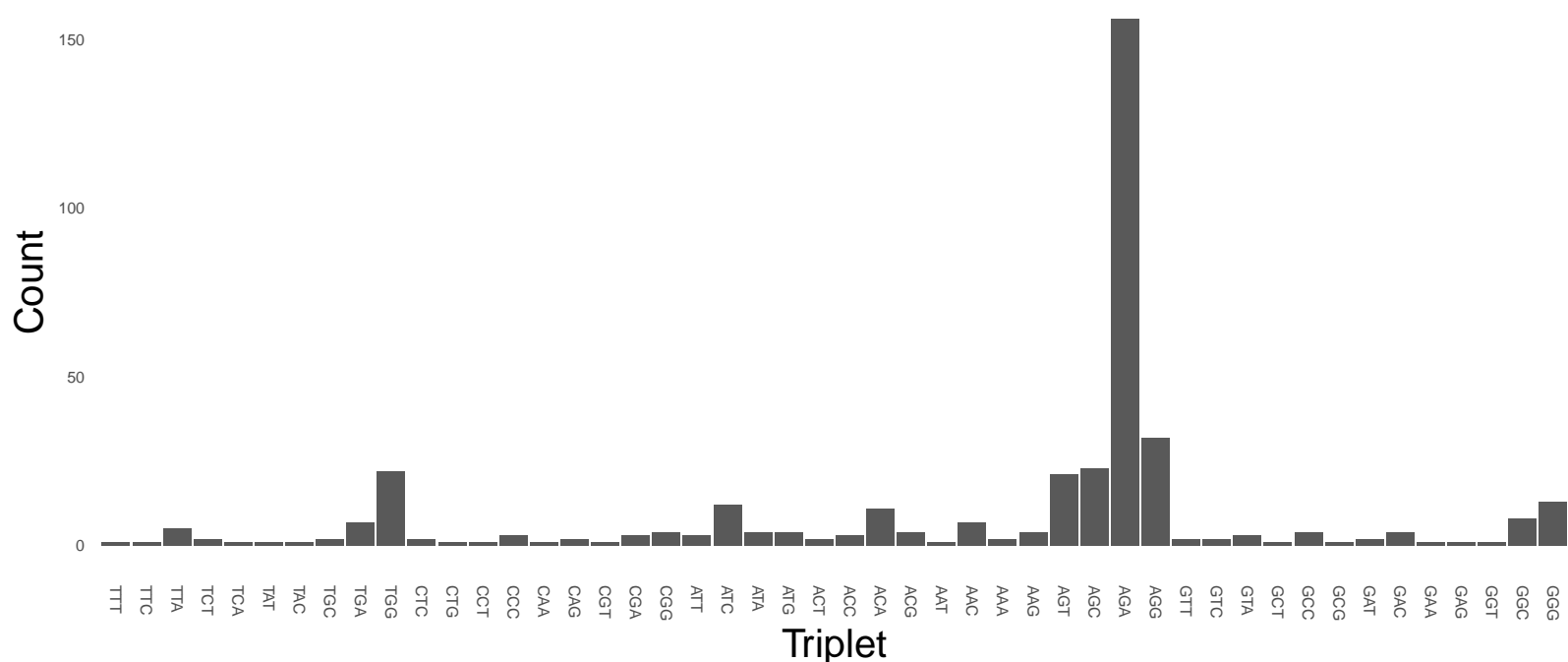
IGHV3-48\*03\_T303G- Final 3 nucleotides as a triplet



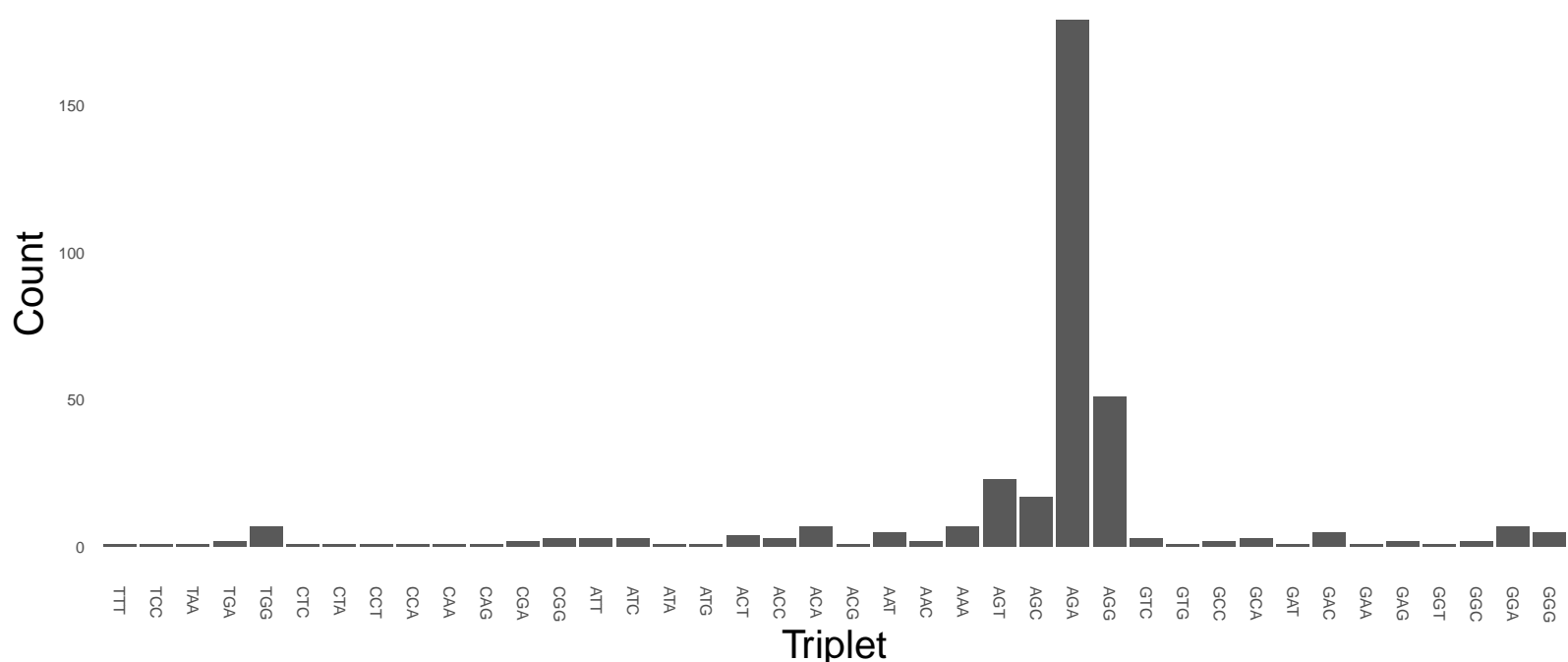
IGHV3-49\*03\_A313G\_T315G- Final 3 nucleotides as a triplet



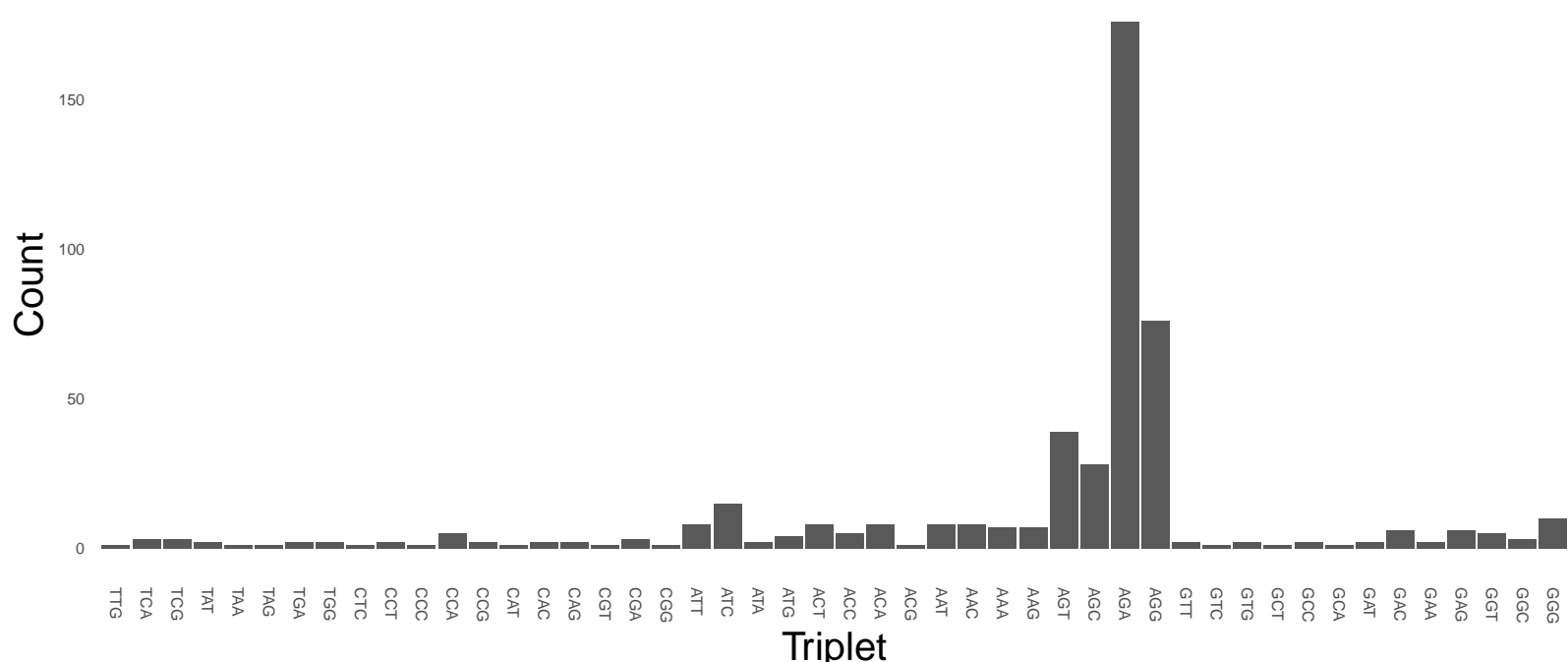
IGHV3-49\*04\_A313G\_T315G- Final 3 nucleotides as a triplet



IGHV3-53\*05\_C300T- Final 3 nucleotides as a triplet

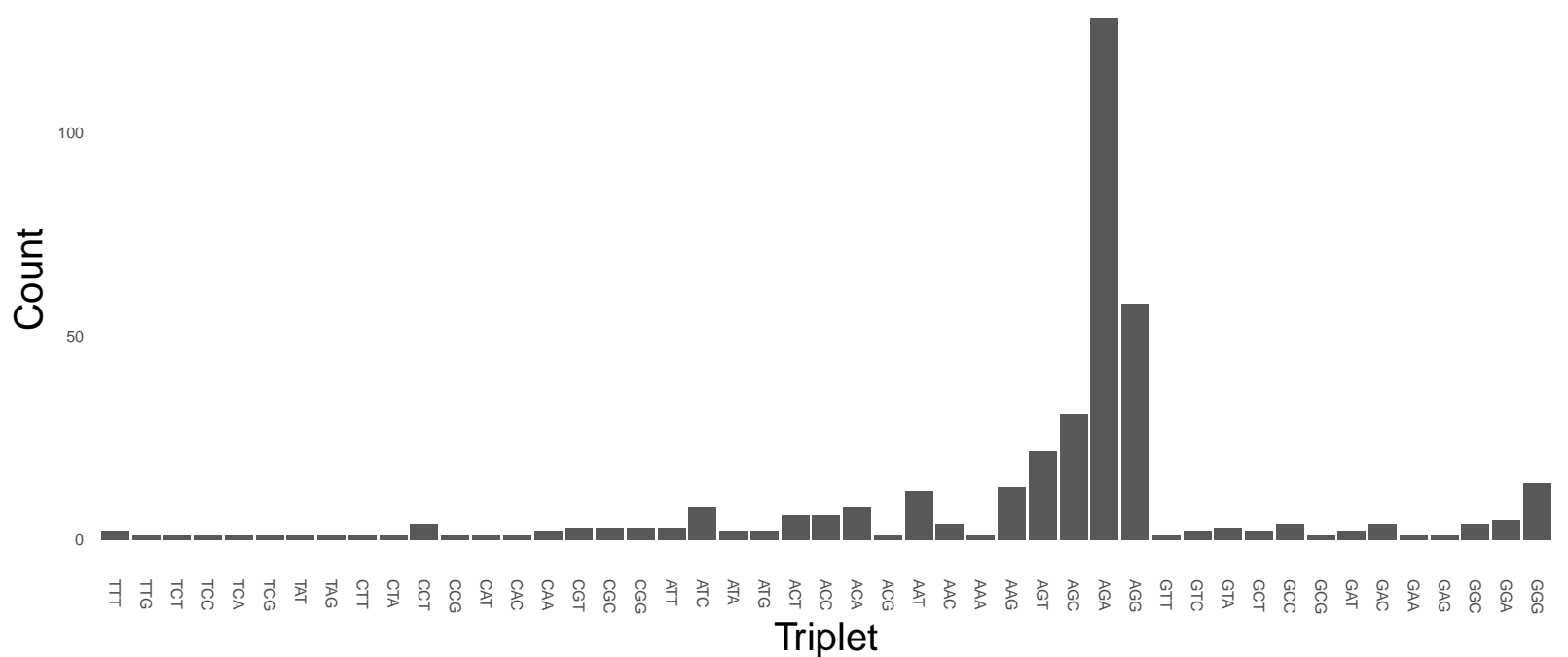


IGHV3-64\*04\_A210C\_T288C\_T300C\_G303A- Final 3 nucleotides as a triplet





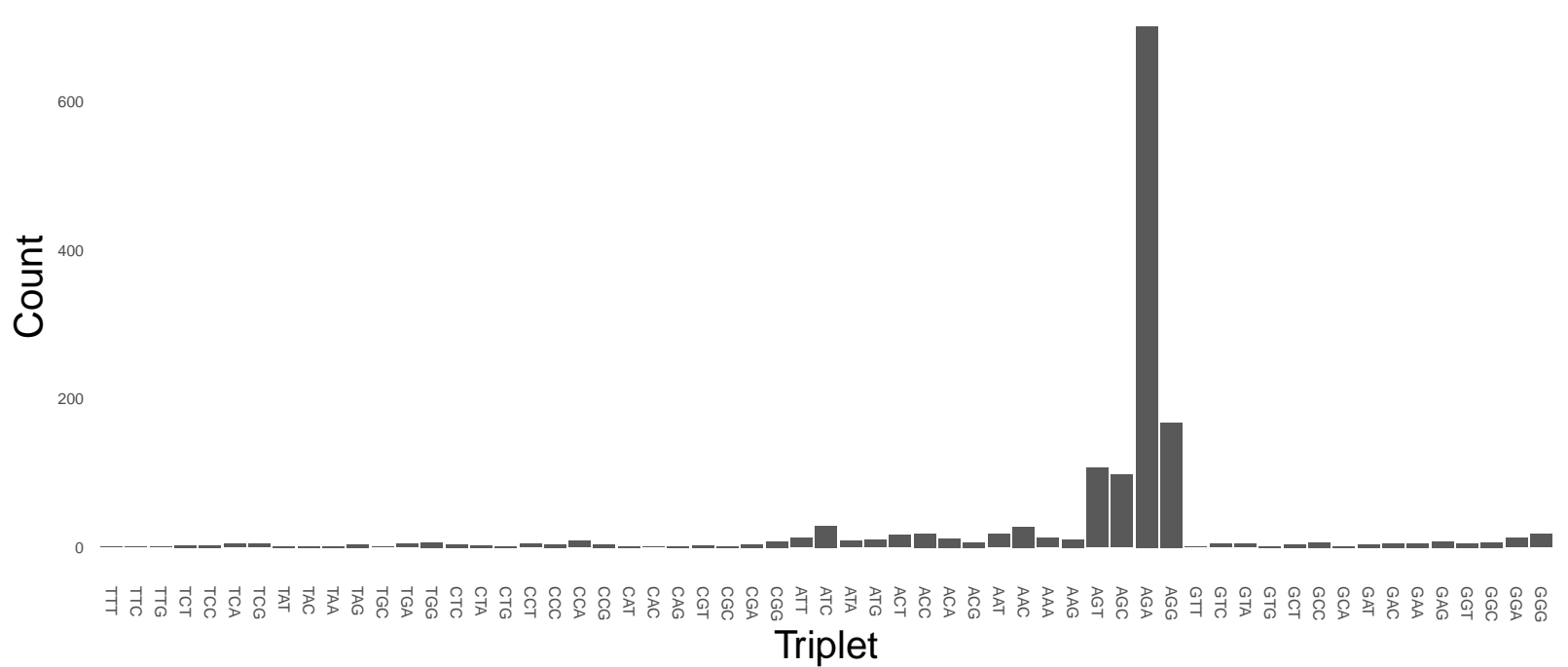
IGHV3-64D\*06\_T314C\_A317G- Final 3 nucleotides as a triplet



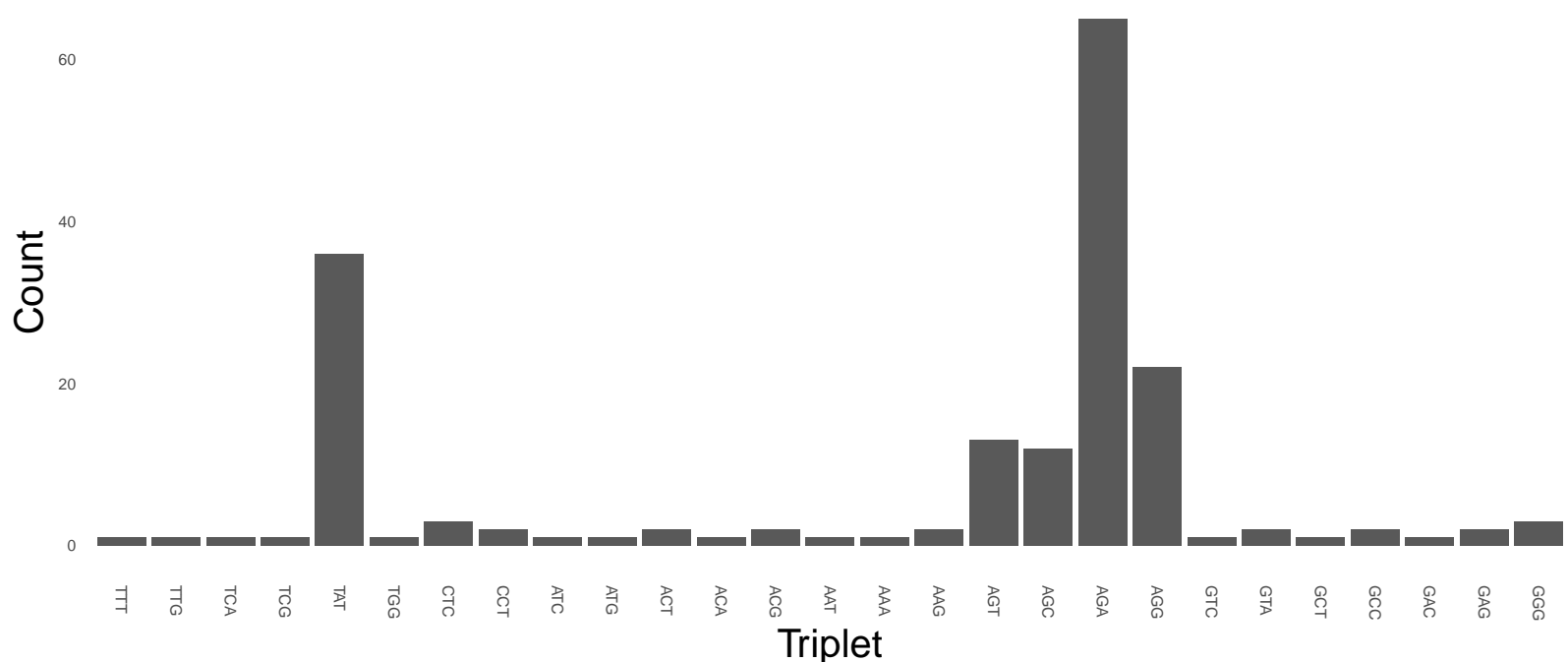
IGHV3-66\*01\_A223C- Final 3 nucleotides as a triplet



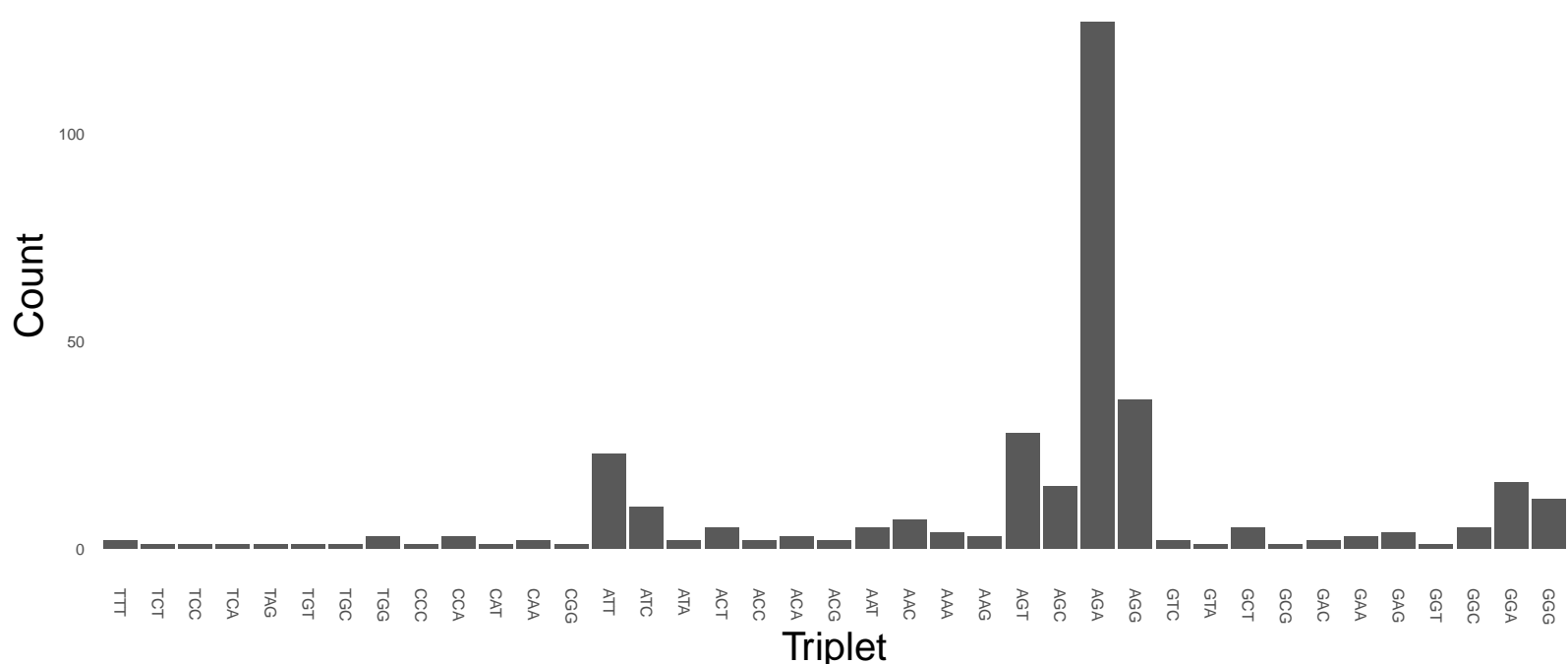
IGHV3-66\*01\_A223C\_T267G- Final 3 nucleotides as a triplet



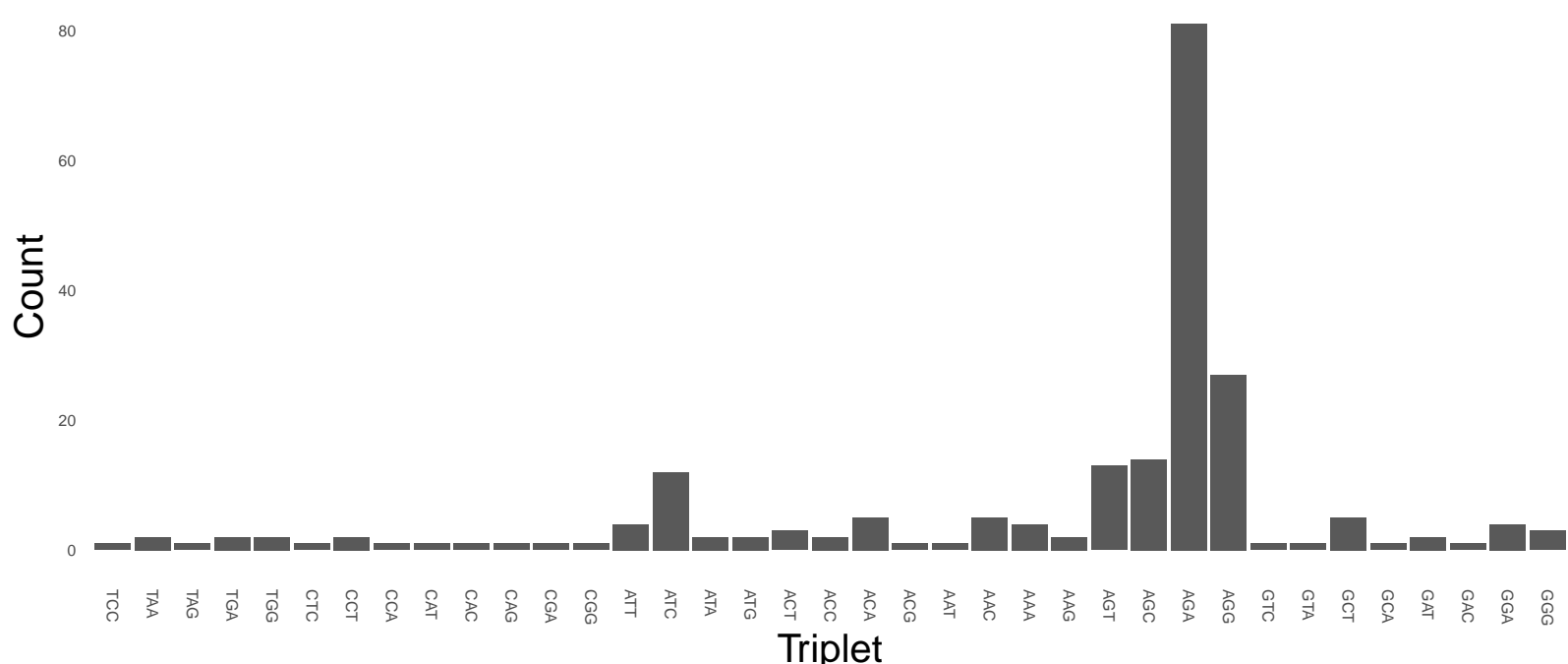
IGHV3-72\*01\_T315G- Final 3 nucleotides as a triplet



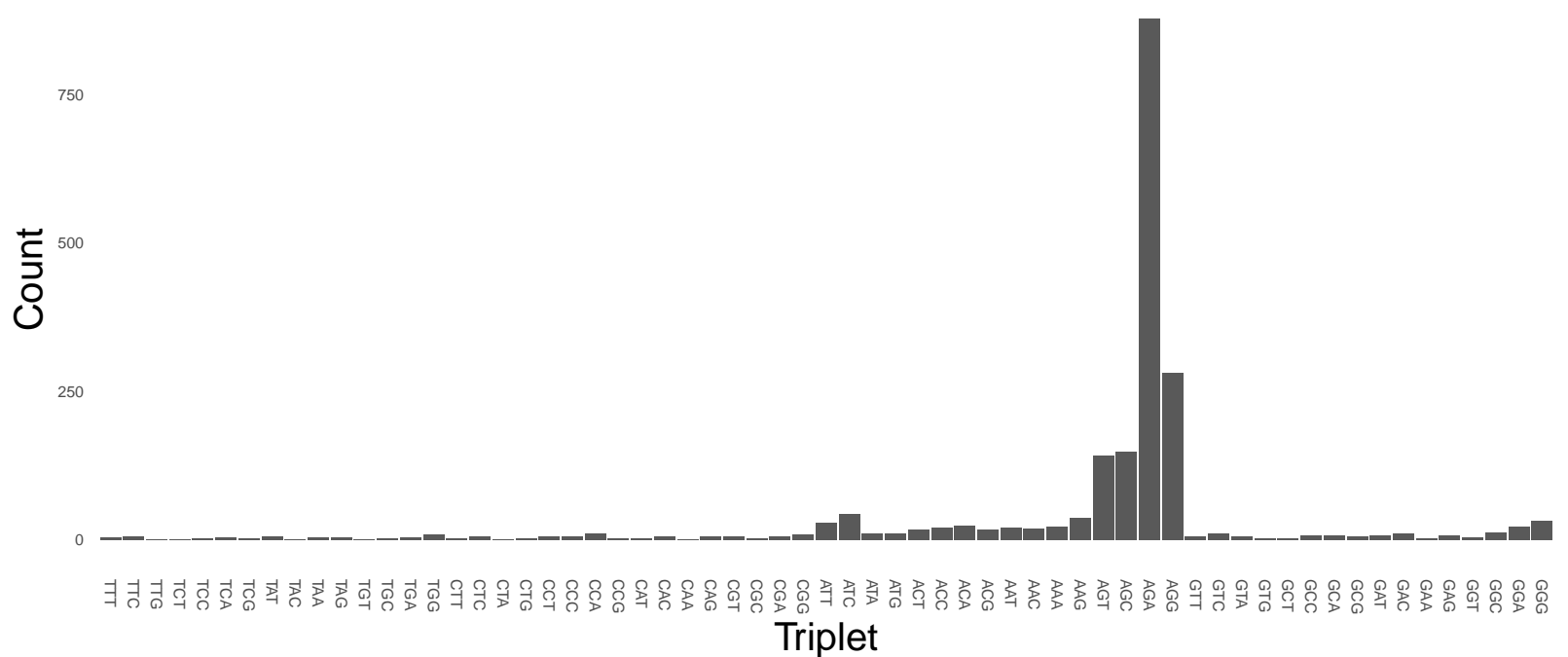
IGHV3-73\*01\_A313G\_T315G- Final 3 nucleotides as a triplet



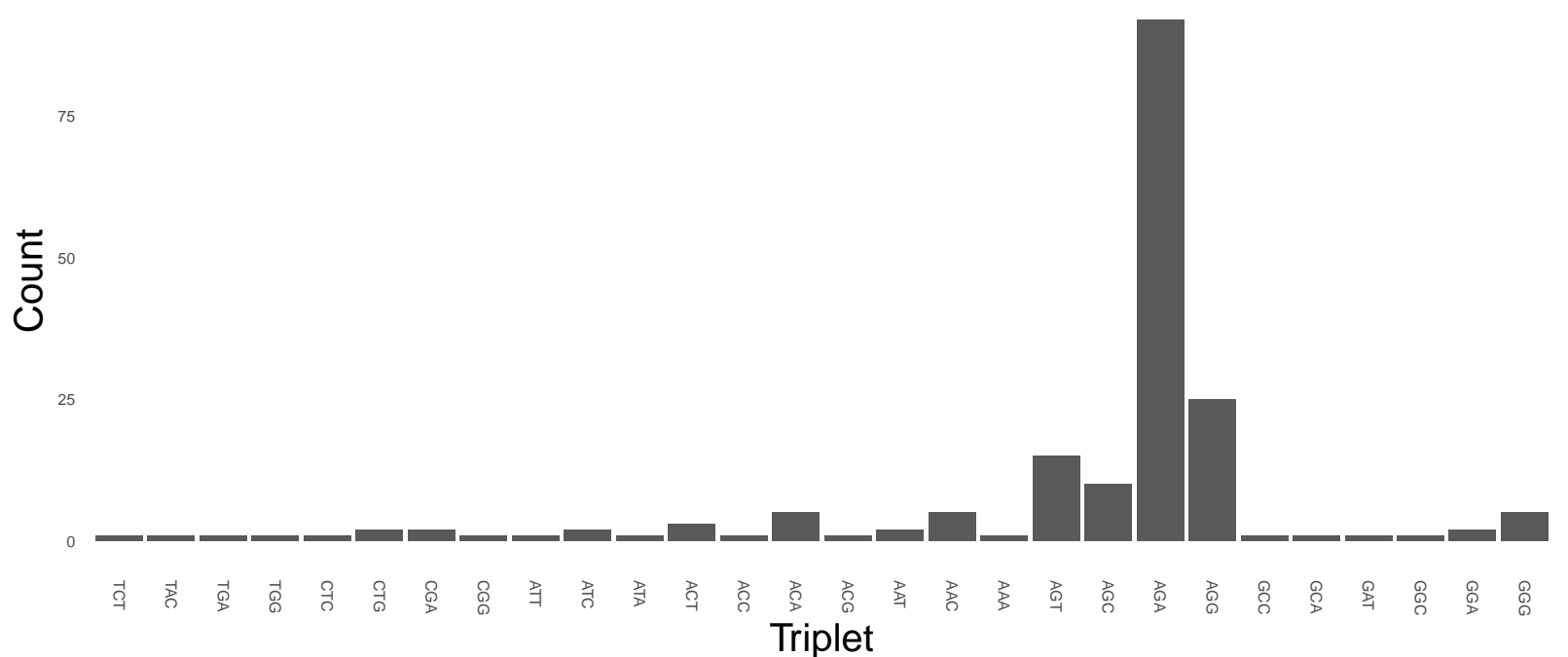
IGHV3-73\*02\_A313G\_T315G- Final 3 nucleotides as a triplet



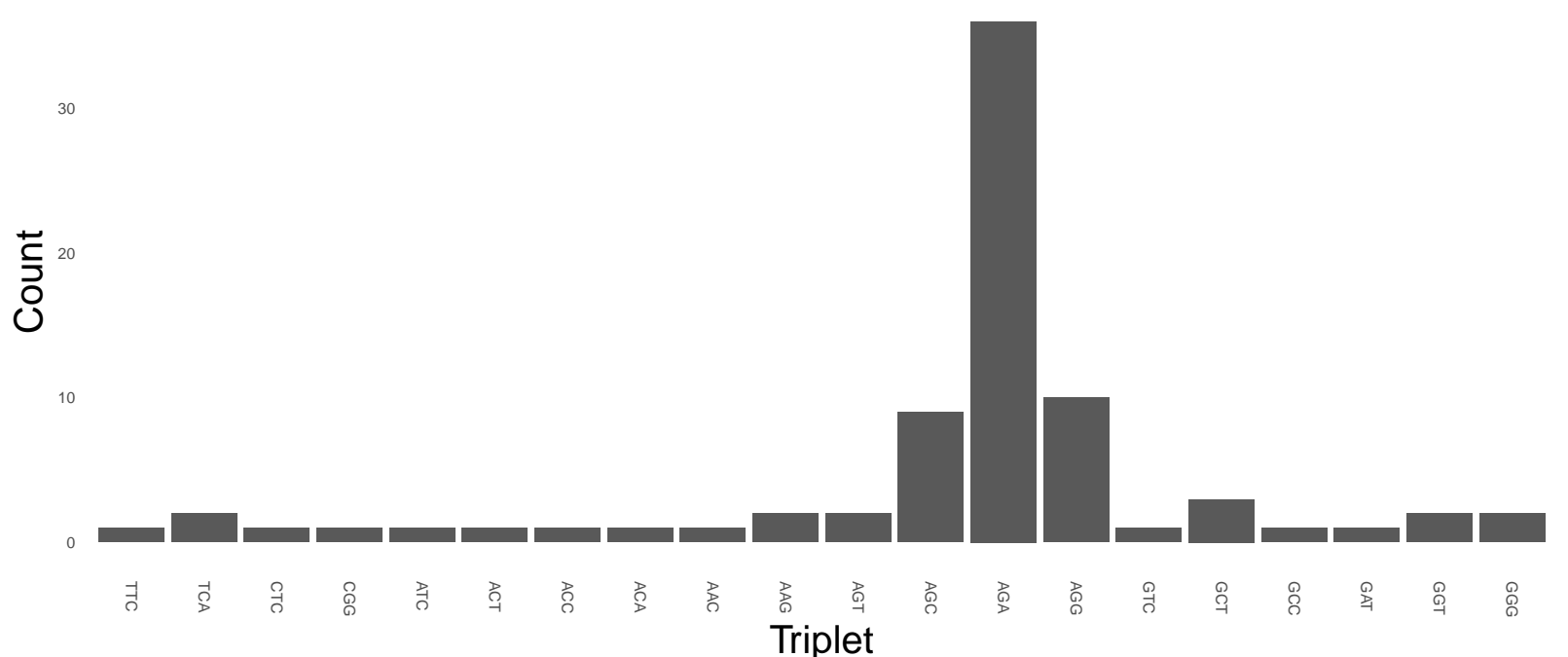
IGHV3–74\*01\_A315G– Final 3 nucleotides as a triplet



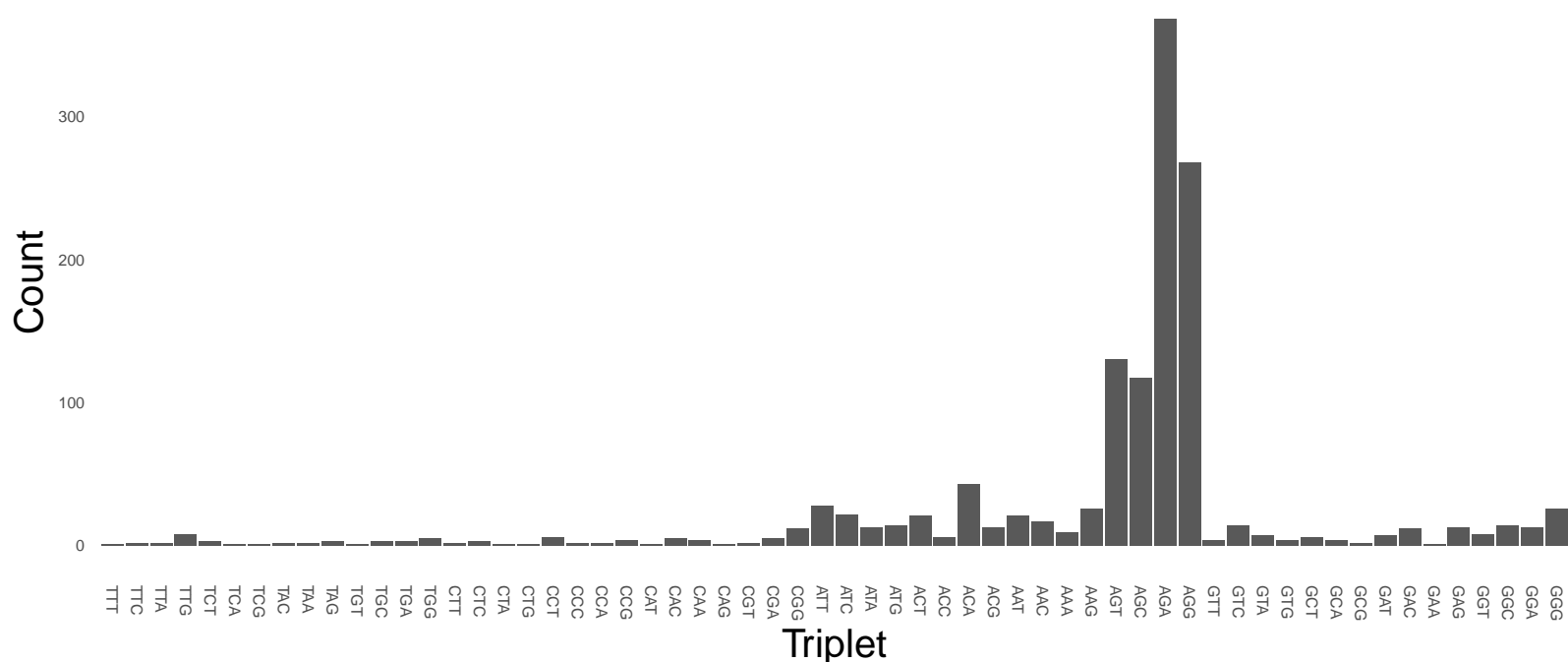
IGHV3–NL1\*01\_G49A\_T201C\_G267T\_A317G– Final 3 nucleotides as a triplet



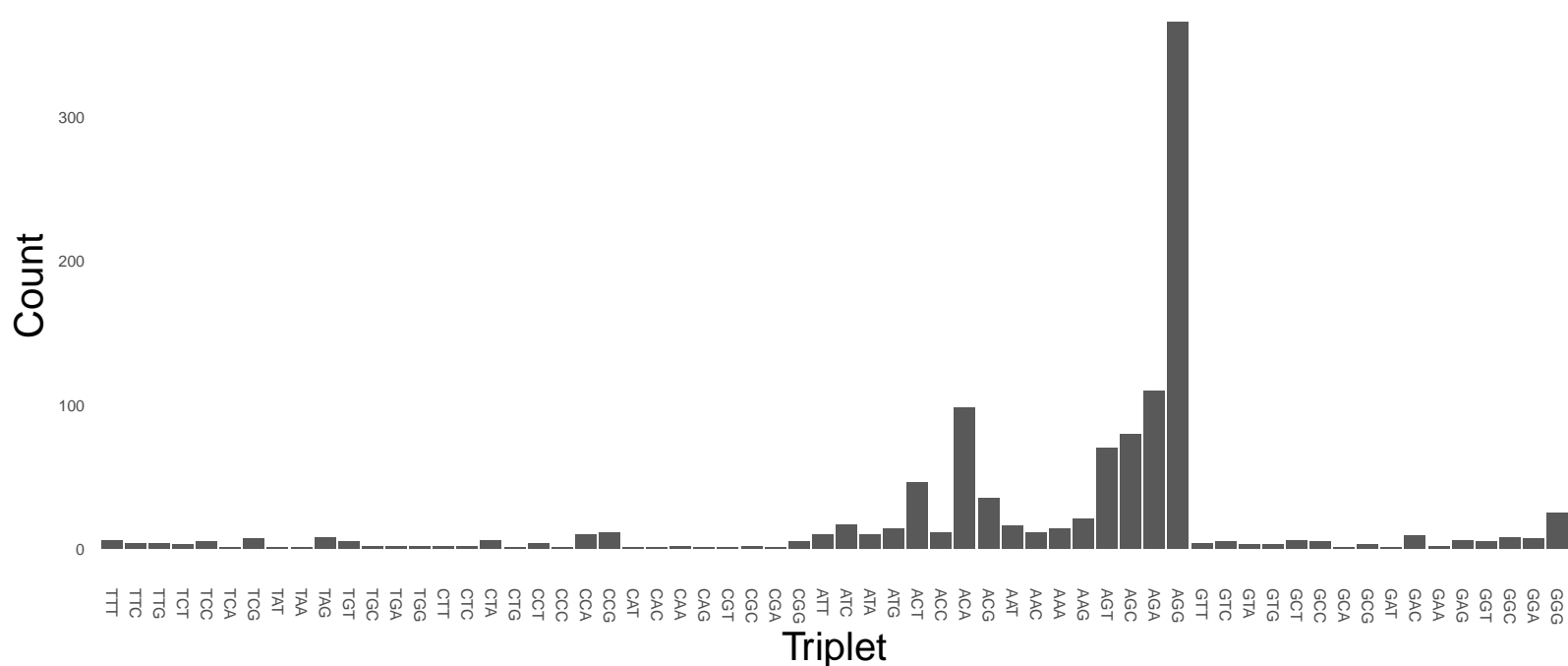
IGHV3–NL1\*01\_G49A\_C159G\_T160G\_T201C\_G267T\_T288C\_T300C\_A317G– Final 3 nucleotides as a triplet



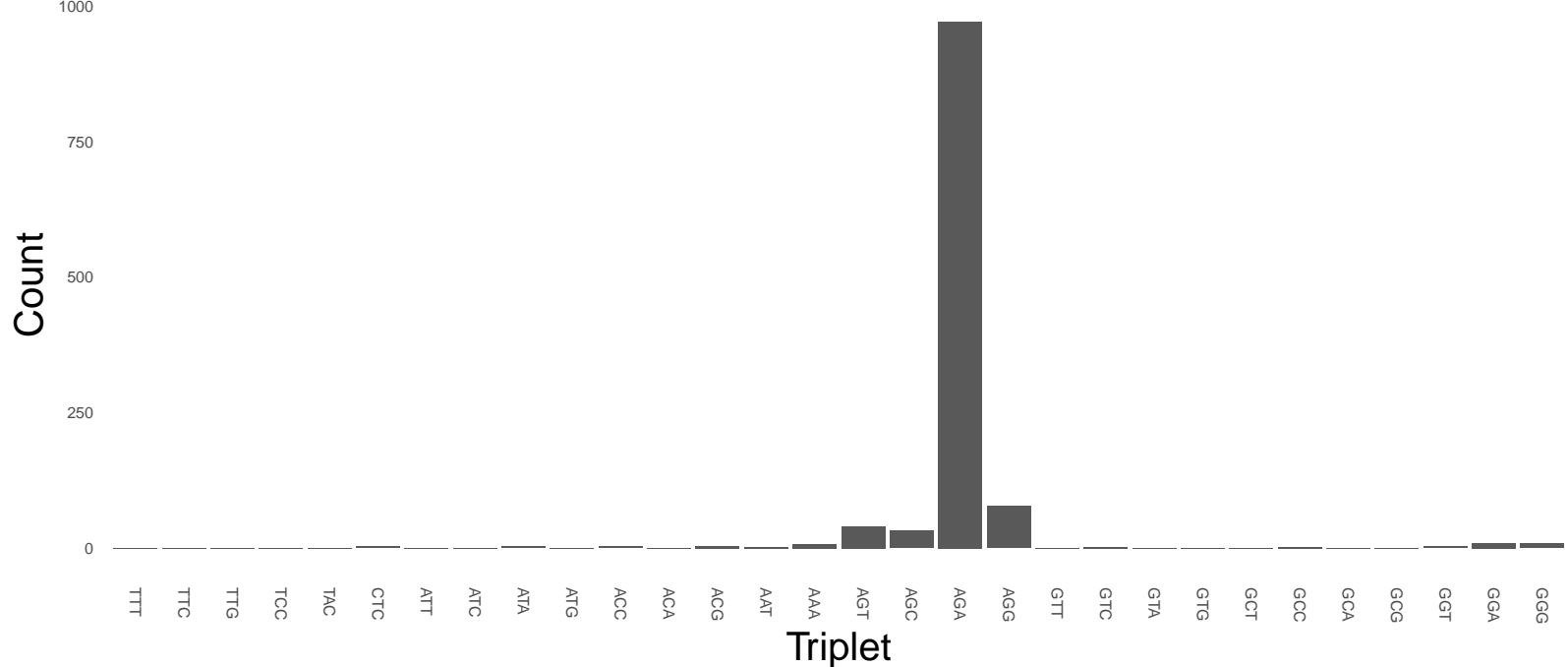
IGHV4-30-2\*01\_C315G- Final 3 nucleotides as a triplet



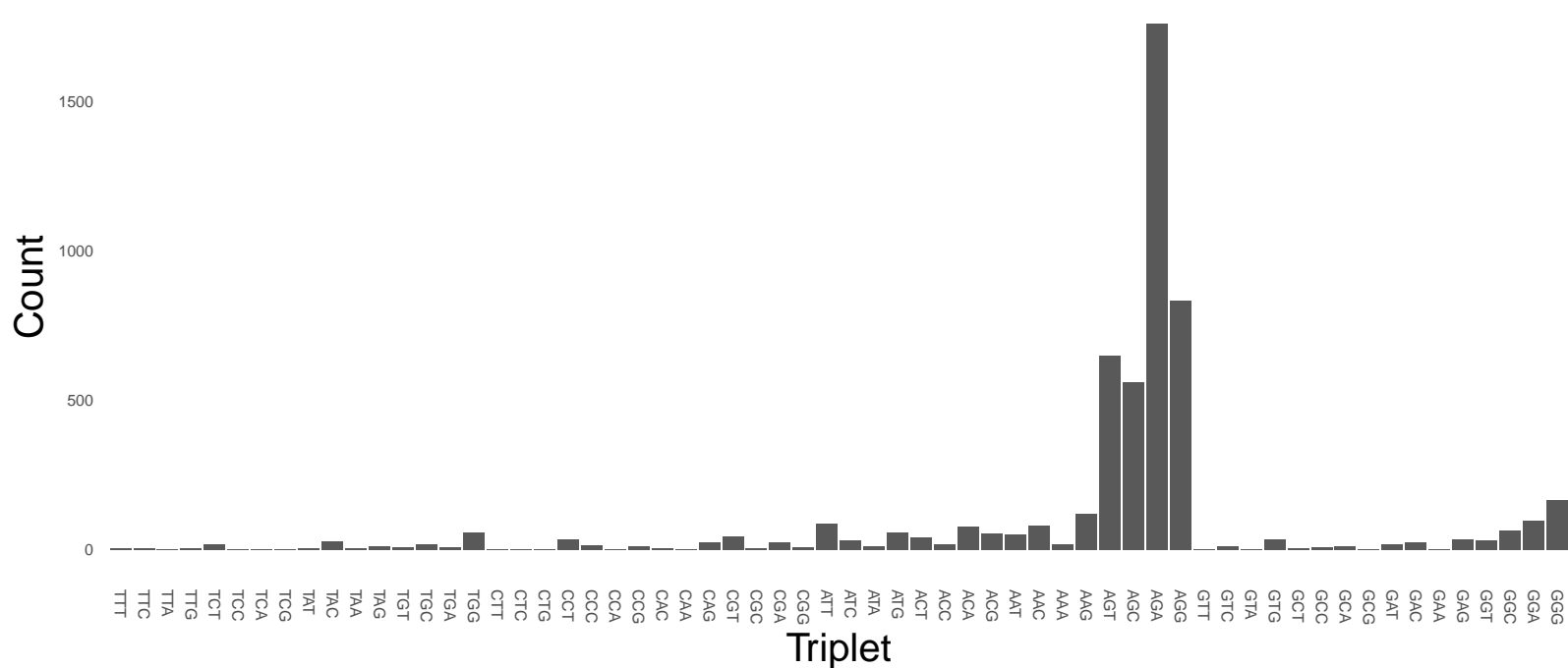
IGHV4-30-2\*01\_C300T\_C315G- Final 3 nucleotides as a triplet



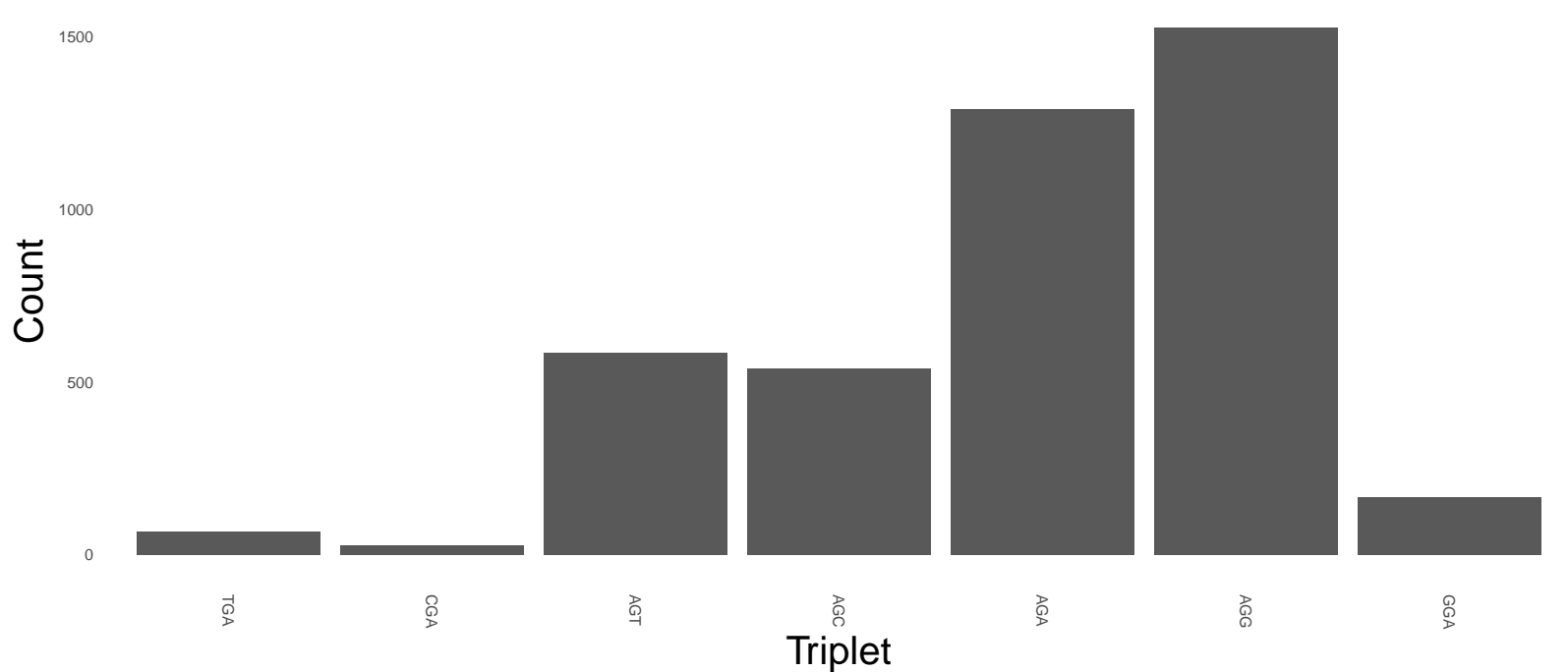
IGHV4-38-2\*01\_A291G\_C300T- Final 3 nucleotides as a triplet



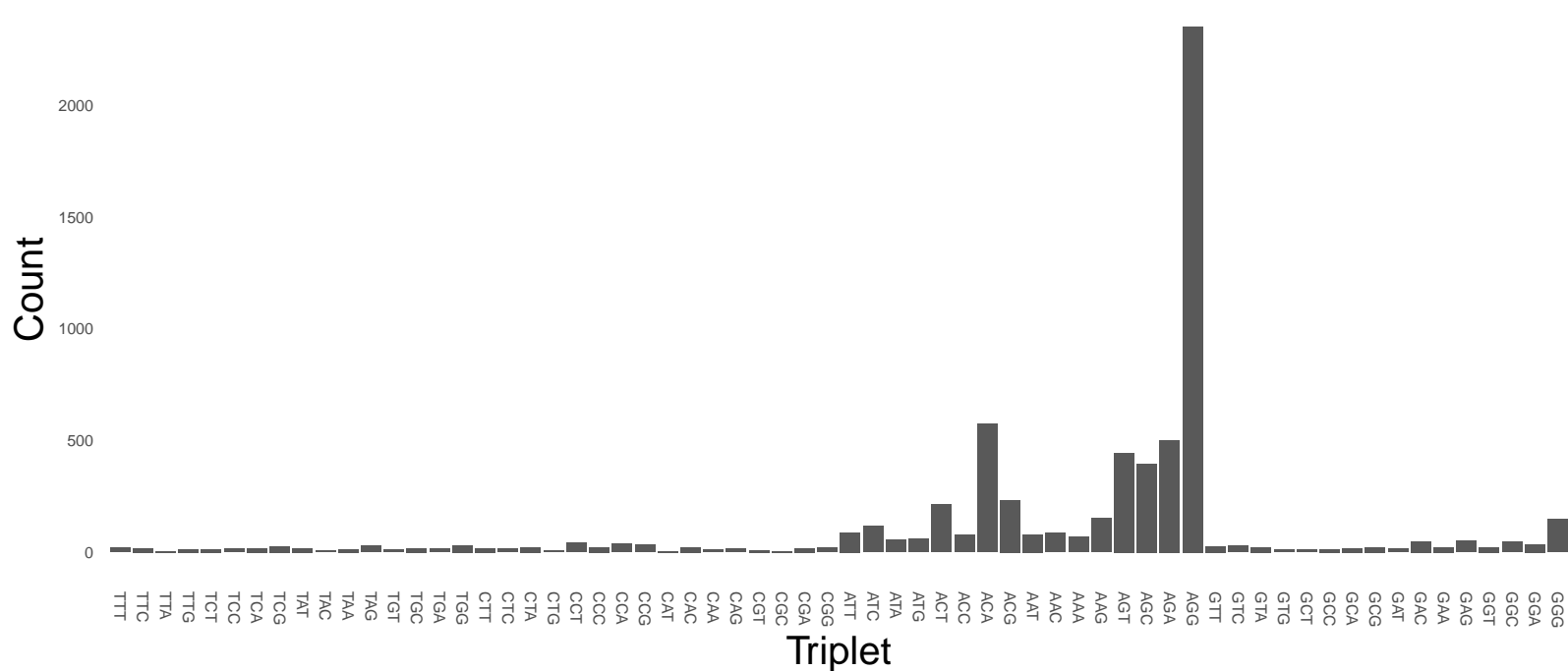
IGHV4-38-2\*02\_A70G- Final 3 nucleotides as a triplet



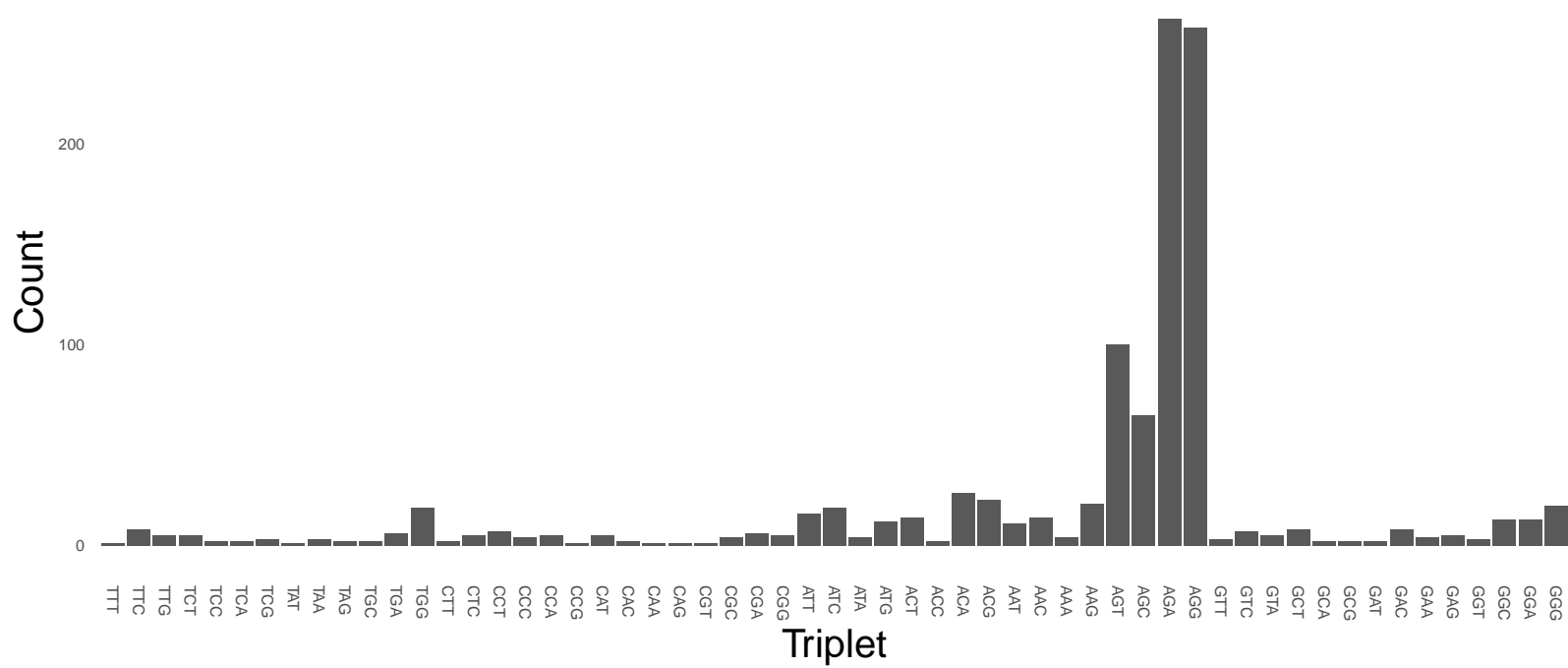
IGHV4-39\*02\_C258G- Final 3 nucleotides as a triplet



IGHV4-59\*12\_C300T- Final 3 nucleotides as a triplet

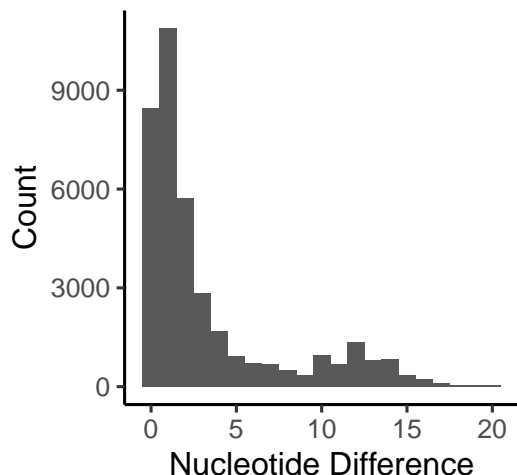


IGHV6-1\*01\_A315G- Final 3 nucleotides as a triplet



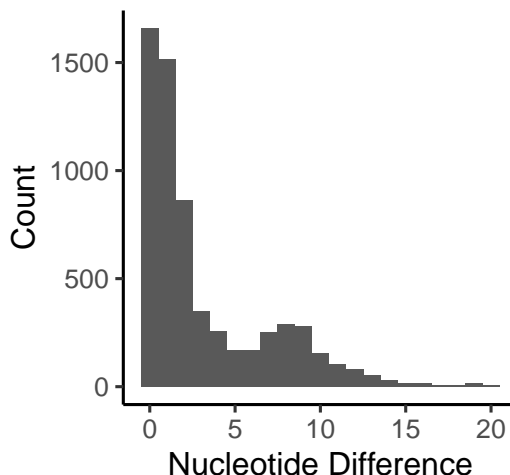
### IGHV1-2\*02

38620 sequences assigned  
8470 (21.9%) exact matches, in which:  
6813 unique CDR3  
7 unique J



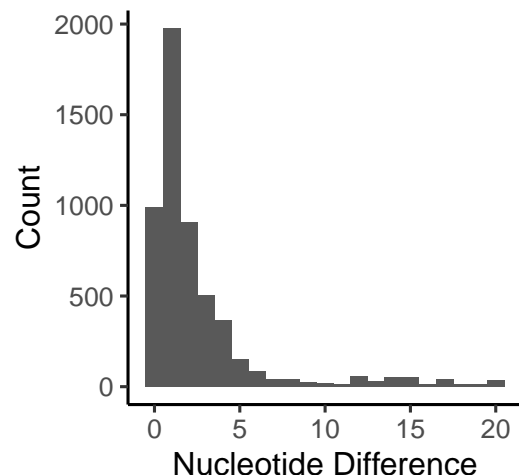
### IGHV1-8\*01

6319 sequences assigned  
1658 (26.2%) exact matches, in which:  
1447 unique CDR3  
7 unique J



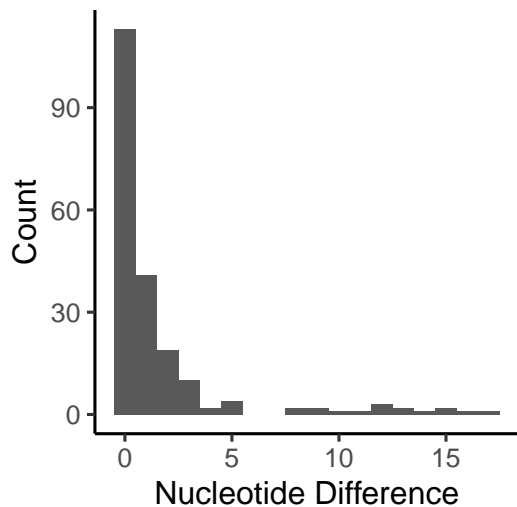
### IGHV1-24\*01

5789 sequences assigned  
991 (17.1%) exact matches, in which:  
675 unique CDR3  
7 unique J



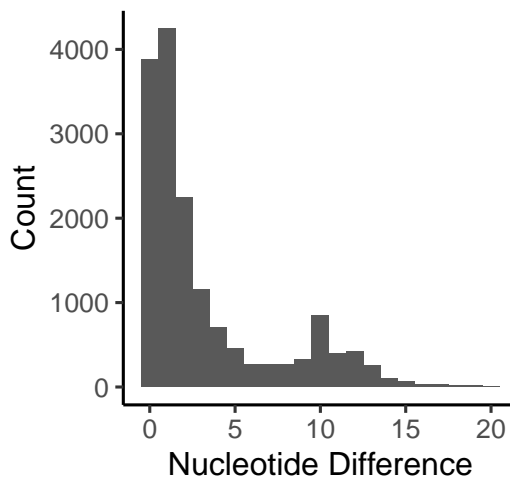
### IGHV1-3\*02

207 sequences assigned  
113 (54.6%) exact matches, in which:  
112 unique CDR3  
6 unique J



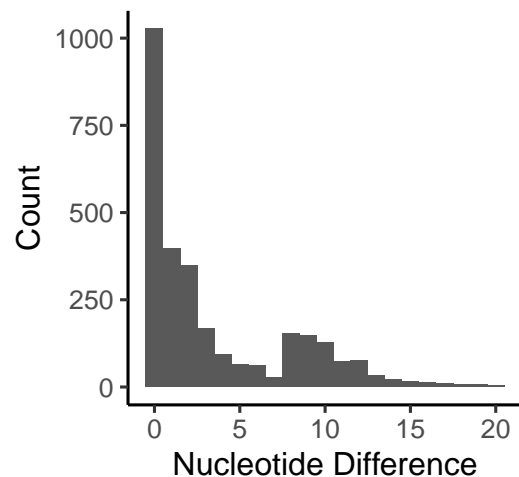
### IGHV1-18\*01

16118 sequences assigned  
3882 (24.1%) exact matches, in which:  
3322 unique CDR3  
7 unique J



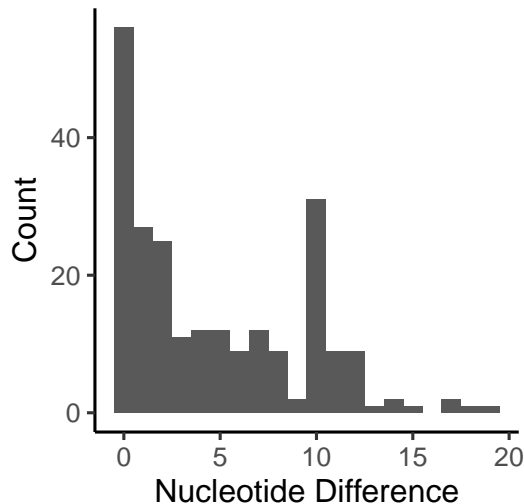
### IGHV1-24\*01\_A315G\_C

2959 sequences assigned  
1027 (34.7%) exact matches, in which:  
1010 unique CDR3  
7 unique J



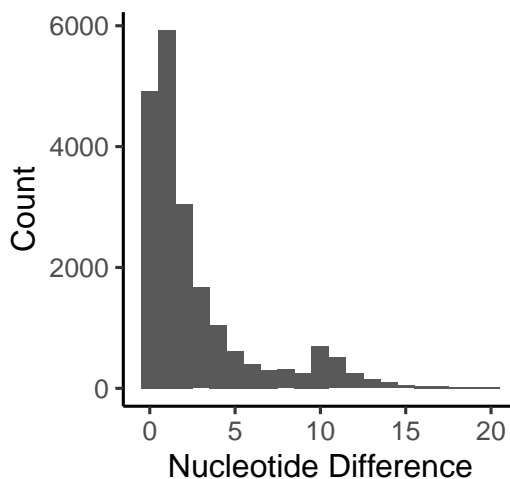
### IGHV1-3\*02\_T296C\_T300C

234 sequences assigned  
56 (23.9%) exact matches, in which:  
56 unique CDR3  
6 unique J



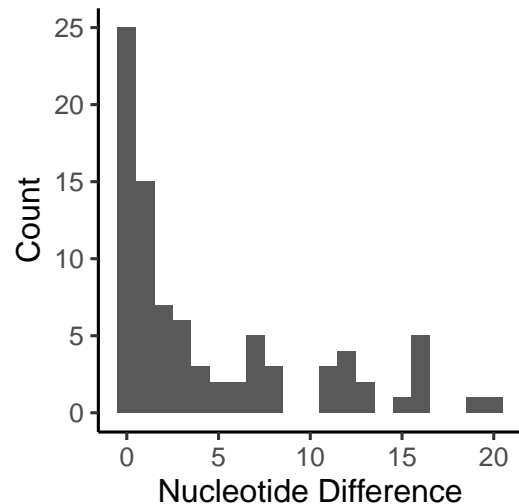
### IGHV1-18\*04

20609 sequences assigned  
4916 (23.9%) exact matches, in which:  
4178 unique CDR3  
7 unique J



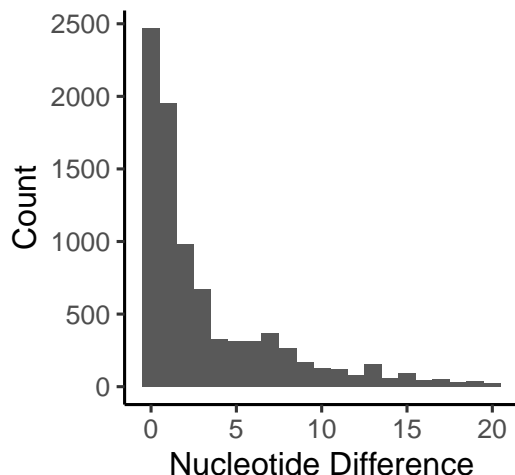
### IGHV1-45\*02

86 sequences assigned  
25 (29.1%) exact matches, in which:  
24 unique CDR3  
6 unique J



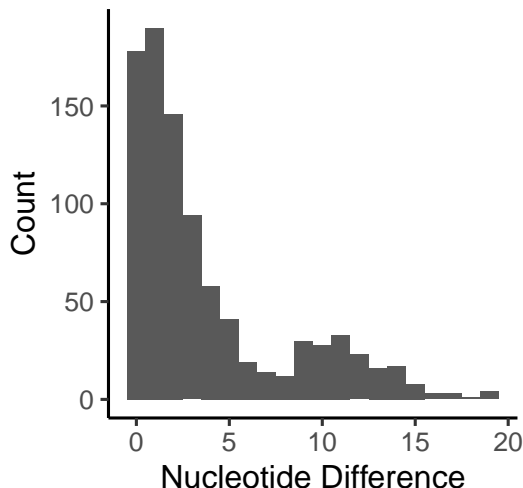
### IGHV1-46\*01

8773 sequences assigned  
2468 (28.1%) exact matches, in which:  
2249 unique CDR3  
7 unique J



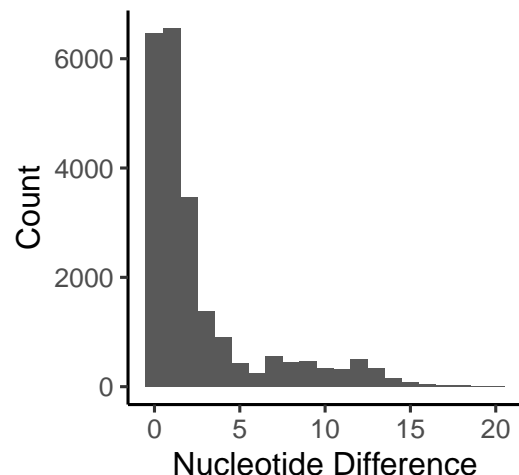
### IGHV1-58\*01\_G316A\_C3

925 sequences assigned  
178 (19.2%) exact matches, in which:  
178 unique CDR3  
7 unique J



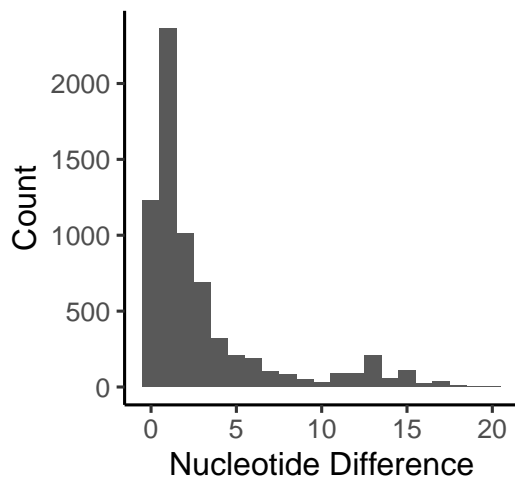
### IGHV1-69\*06

23004 sequences assigned  
6462 (28.1%) exact matches, in which:  
5331 unique CDR3  
7 unique J



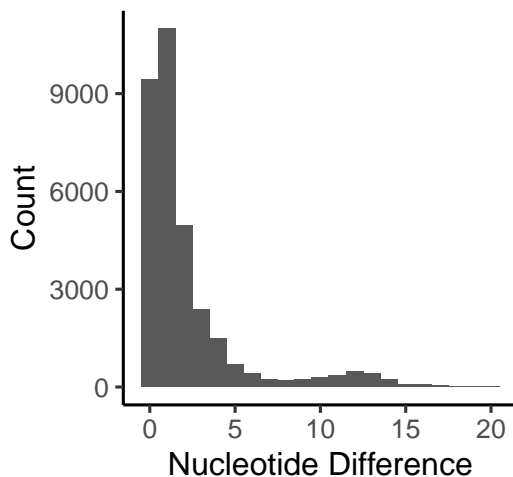
### IGHV1-46\*03

6951 sequences assigned  
1226 (17.6%) exact matches, in which:  
900 unique CDR3  
7 unique J



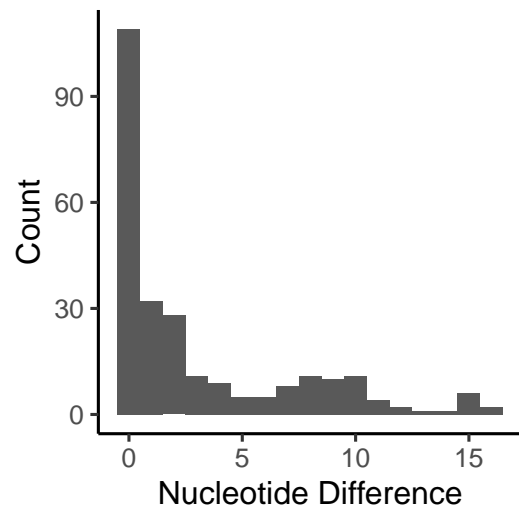
### IGHV1-69\*01

33430 sequences assigned  
9421 (28.2%) exact matches, in which:  
7627 unique CDR3  
7 unique J



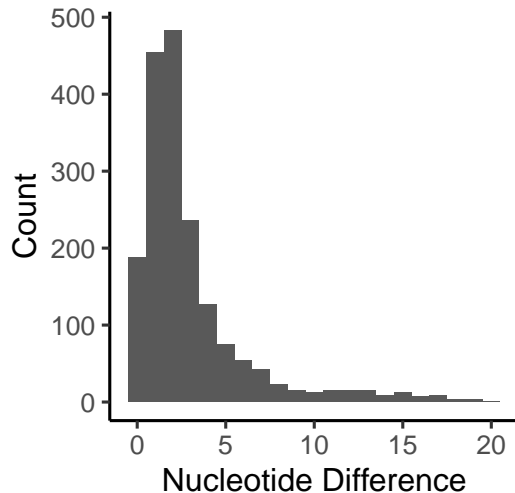
### IGHV1-69-2\*01\_A315G\_C

260 sequences assigned  
109 (41.9%) exact matches, in which:  
109 unique CDR3  
7 unique J



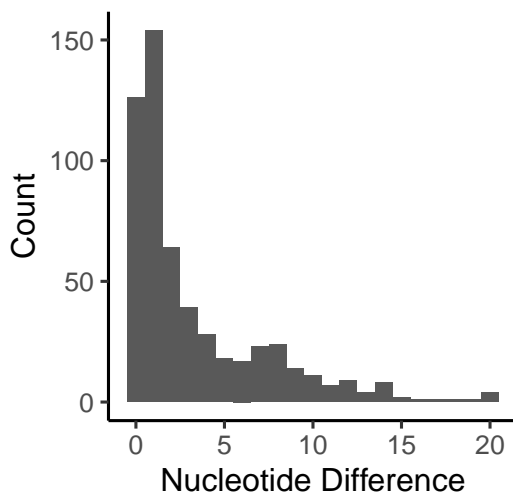
### IGHV1-58\*02

1822 sequences assigned  
188 (10.3%) exact matches, in which:  
127 unique CDR3  
6 unique J



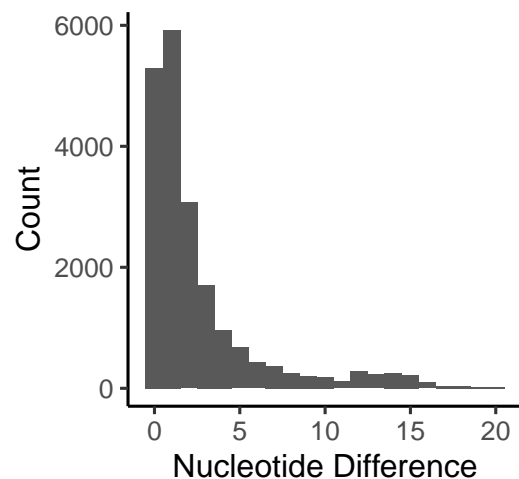
### IGHV1-69-2\*01

590 sequences assigned  
126 (21.4%) exact matches, in which:  
91 unique CDR3  
5 unique J



### IGHV1-69\*08\_C191T

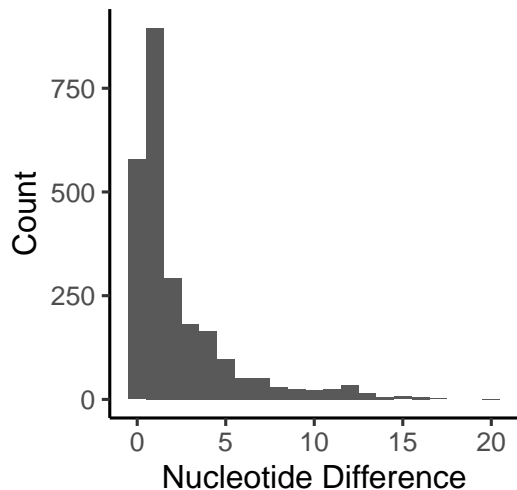
20606 sequences assigned  
5299 (25.7%) exact matches, in which:  
4433 unique CDR3  
7 unique J





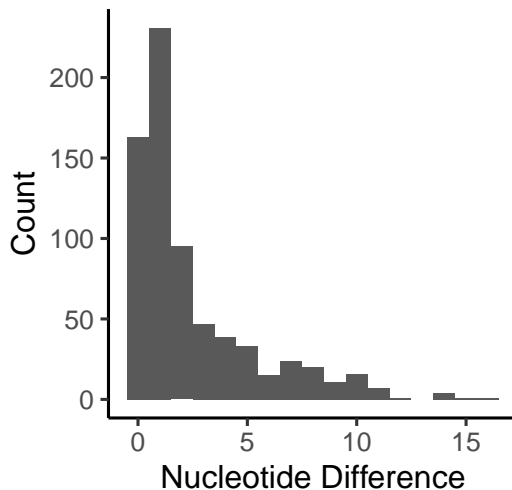
### IGHV2-5\*01

2525 sequences assigned  
578 (22.9%) exact matches, in which:  
476 unique CDR3  
7 unique J



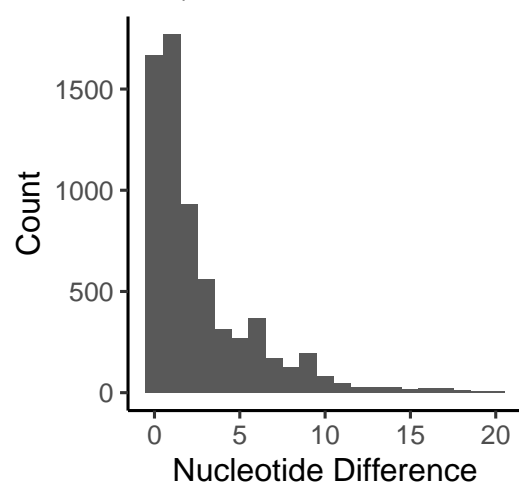
### IGHV2-70\*01

741 sequences assigned  
163 (22%) exact matches, in which:  
128 unique CDR3  
5 unique J



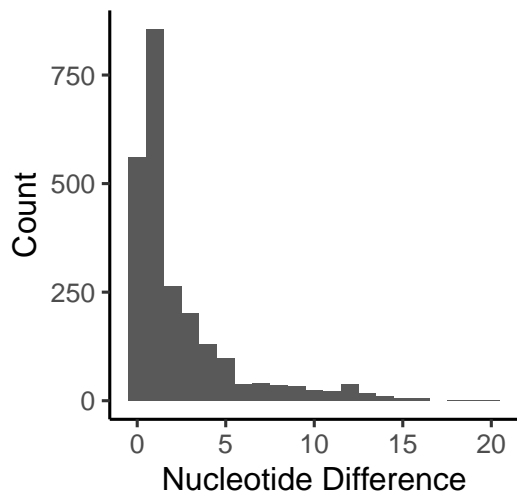
### IGHV3-7\*03

6757 sequences assigned  
1667 (24.7%) exact matches, in which:  
1417 unique CDR3  
7 unique J



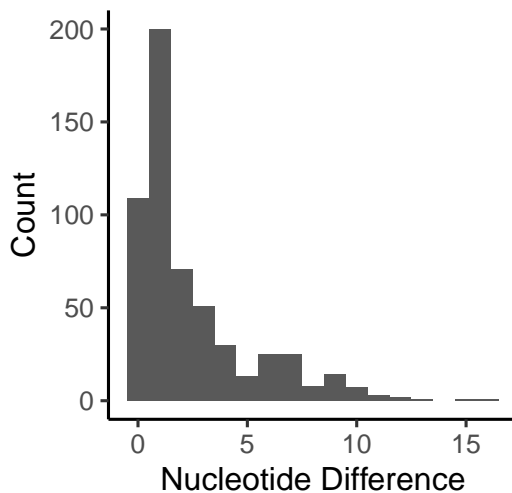
### IGHV2-5\*02

2436 sequences assigned  
560 (23%) exact matches, in which:  
452 unique CDR3  
7 unique J



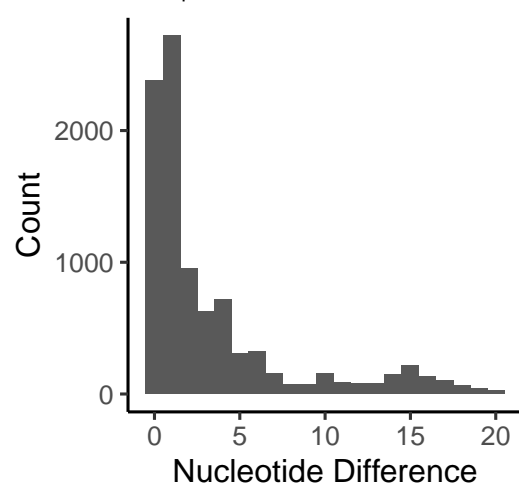
### IGHV2-70\*04

586 sequences assigned  
109 (18.6%) exact matches, in which:  
87 unique CDR3  
6 unique J



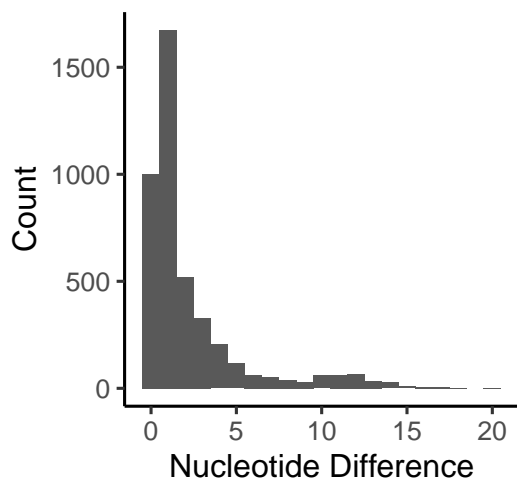
### IGHV3-9\*01

9616 sequences assigned  
2379 (24.7%) exact matches, in which:  
1860 unique CDR3  
7 unique J



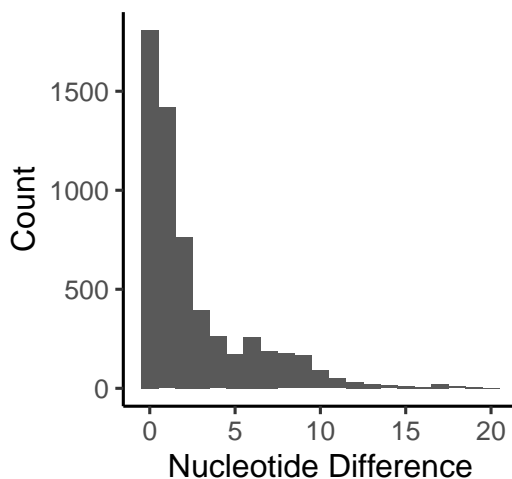
### IGHV2-26\*01

4563 sequences assigned  
1000 (21.9%) exact matches, in which:  
818 unique CDR3  
7 unique J



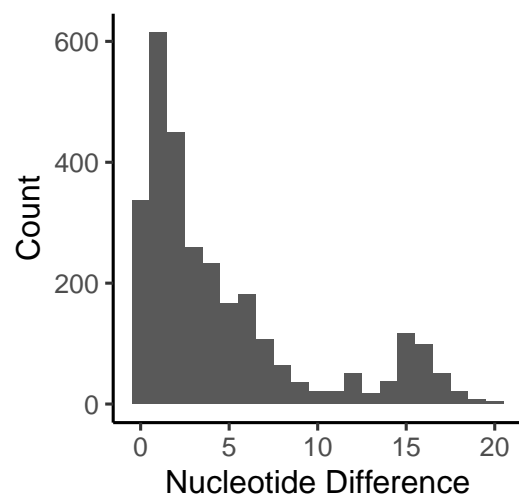
### IGHV3-7\*01

5953 sequences assigned  
1809 (30.4%) exact matches, in which:  
1588 unique CDR3  
7 unique J



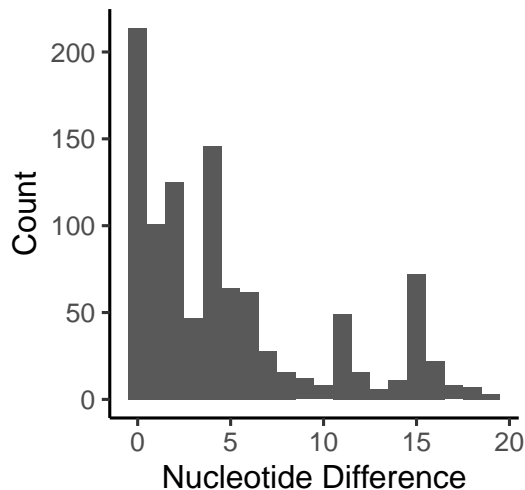
### IGHV3-9\*01\_T279C\_T28

2912 sequences assigned  
337 (11.6%) exact matches, in which:  
332 unique CDR3  
7 unique J



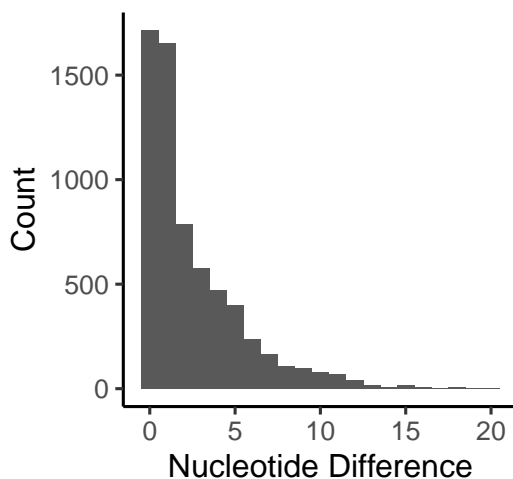
### IGHV3-9\*01\_T279C\_T28

1028 sequences assigned  
214 (20.8%) exact matches, in which:  
214 unique CDR3  
6 unique J



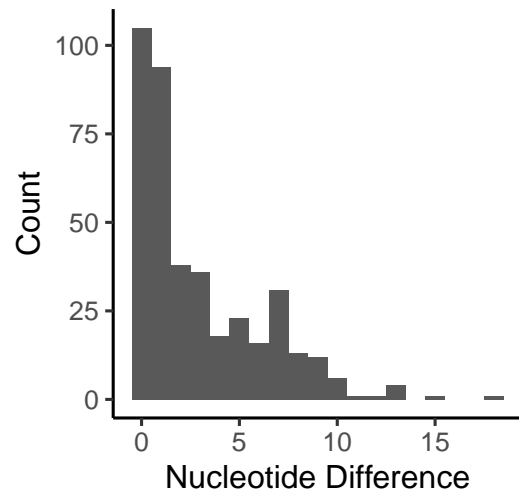
### IGHV3-11\*06

6613 sequences assigned  
1714 (25.9%) exact matches, in which:  
1396 unique CDR3  
7 unique J



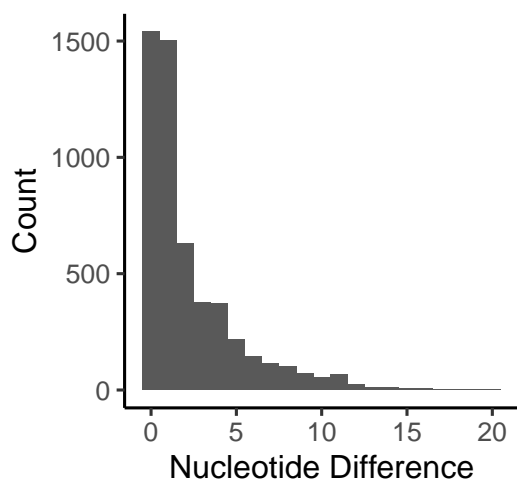
### IGHV3-13\*05\_T78C\_A31

400 sequences assigned  
105 (26.2%) exact matches, in which:  
89 unique CDR3  
7 unique J



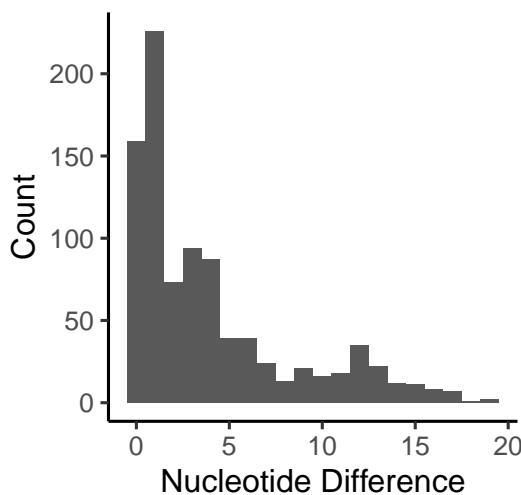
### IGHV3-11\*01

5377 sequences assigned  
1540 (28.6%) exact matches, in which:  
1229 unique CDR3  
7 unique J



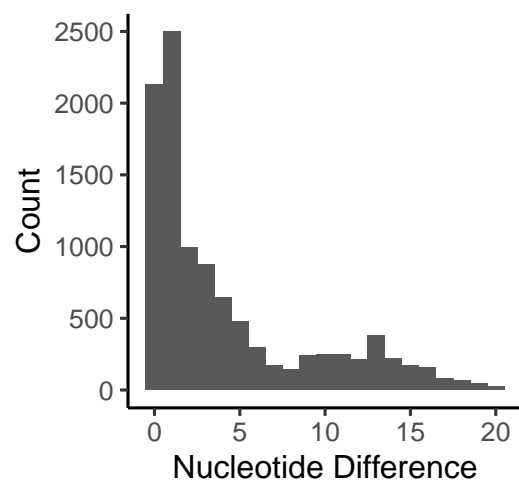
### IGHV3-13\*01

917 sequences assigned  
159 (17.3%) exact matches, in which:  
105 unique CDR3  
7 unique J



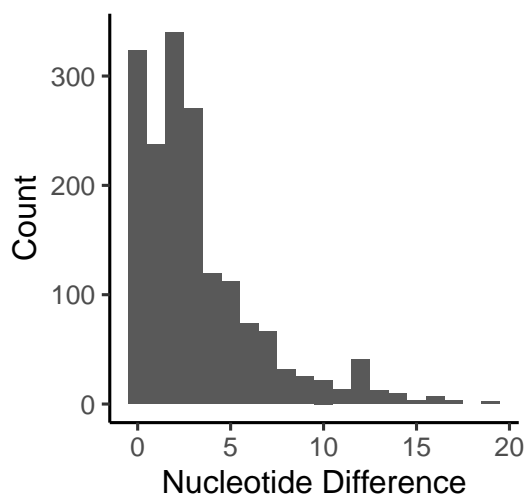
### IGHV3-15\*01

10607 sequences assigned  
2132 (20.1%) exact matches, in which:  
1675 unique CDR3  
7 unique J



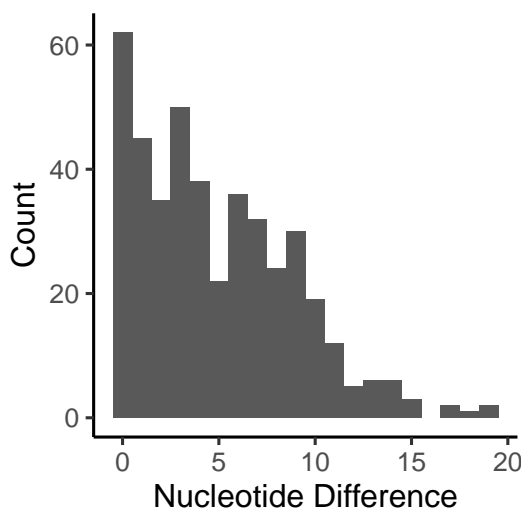
### IGHV3-11\*04

1849 sequences assigned  
323 (17.5%) exact matches, in which:  
322 unique CDR3  
7 unique J



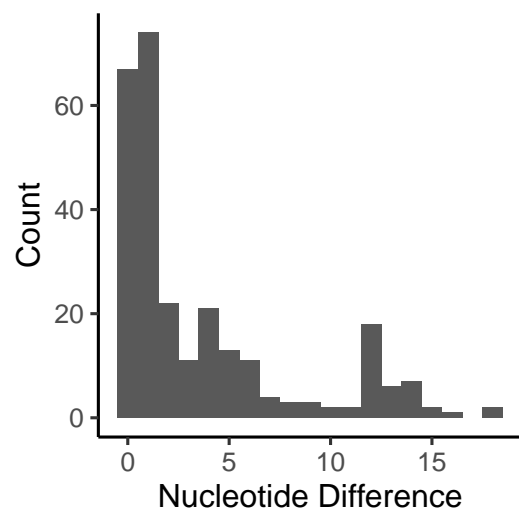
### IGHV3-13\*01\_A315G

433 sequences assigned  
62 (14.3%) exact matches, in which:  
62 unique CDR3  
6 unique J



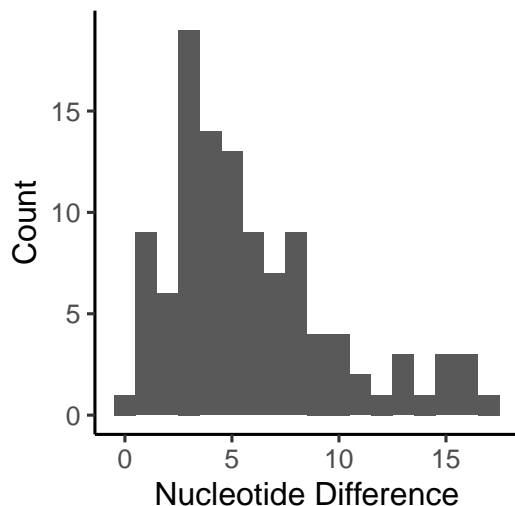
### IGHV3-20\*01

273 sequences assigned  
67 (24.5%) exact matches, in which:  
54 unique CDR3  
6 unique J



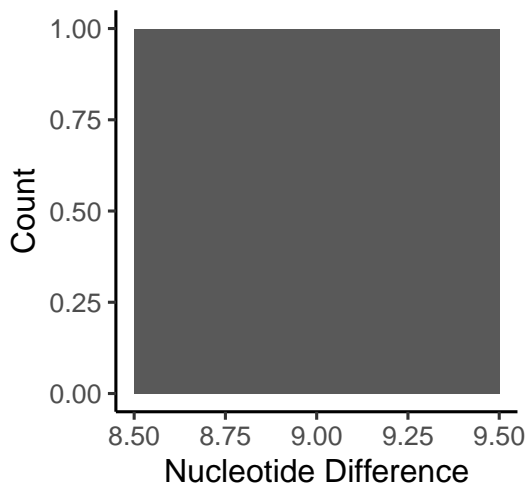
### IGHV3-20\*04

110 sequences assigned  
1 (0.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



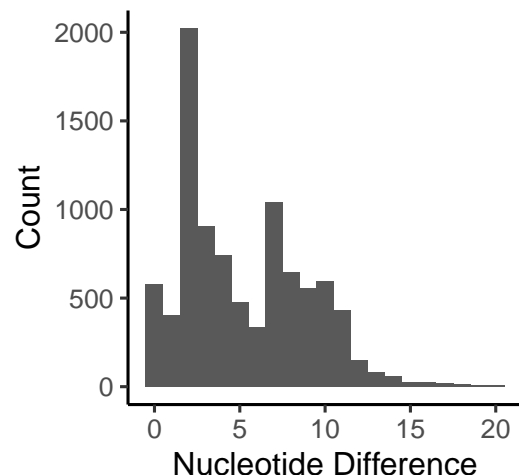
### IGHV3-22\*02

1 sequences assigned  
No exact matches.



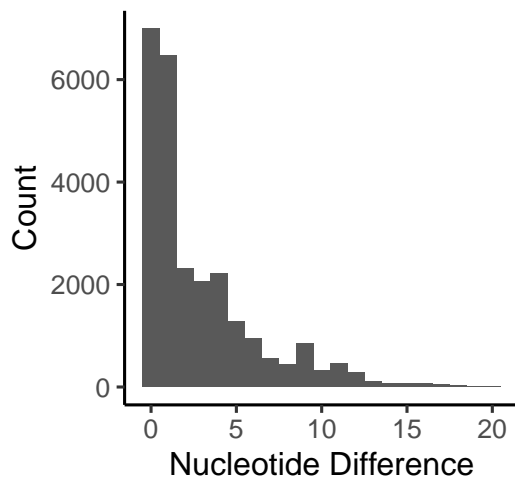
### IGHV3-23\*04\_A39C

9140 sequences assigned  
581 (6.4%) exact matches, in which:  
572 unique CDR3  
7 unique J



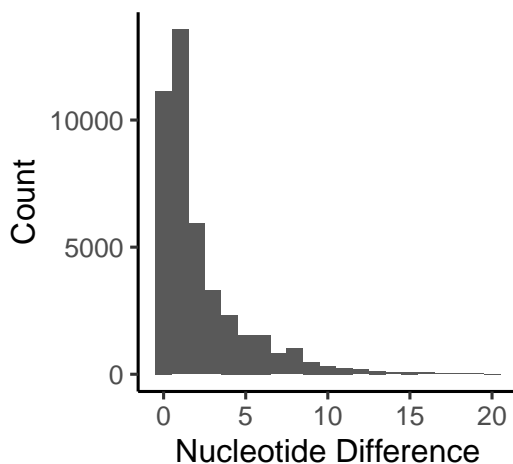
### IGHV3-21\*01

25928 sequences assigned  
6993 (27%) exact matches, in which:  
5692 unique CDR3  
7 unique J



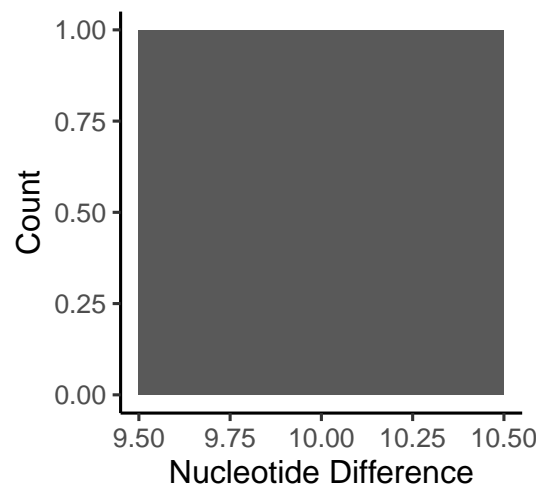
### IGHV3-23\*01

42981 sequences assigned  
11139 (25.9%) exact matches, in which:  
9041 unique CDR3  
7 unique J



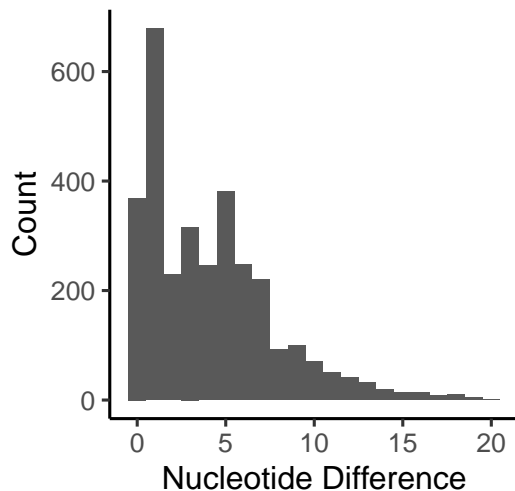
### IGHV3-25\*04

1 sequences assigned  
No exact matches.



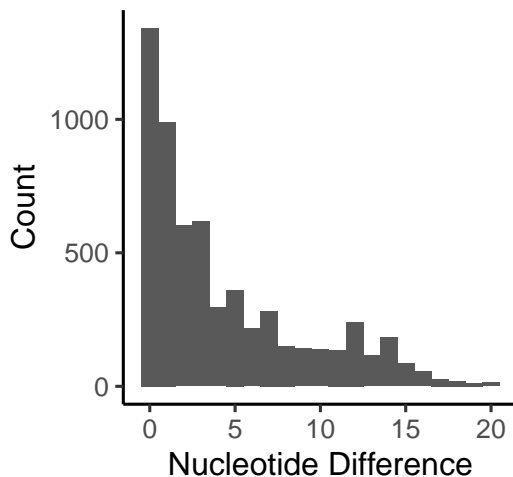
### IGHV3-21\*04

3178 sequences assigned  
369 (11.6%) exact matches, in which:  
361 unique CDR3  
7 unique J



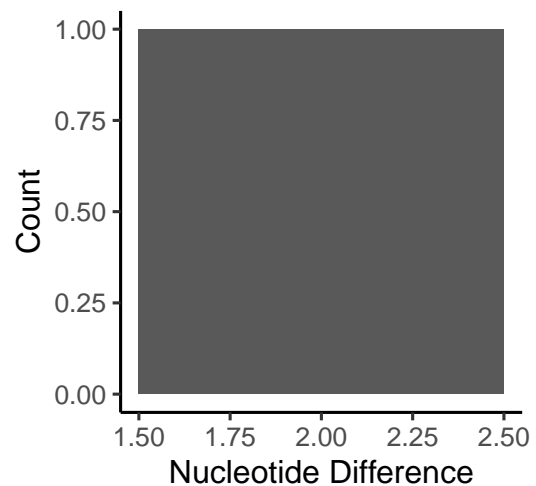
### IGHV3-23\*04

6111 sequences assigned  
1342 (22%) exact matches, in which:  
1201 unique CDR3  
7 unique J



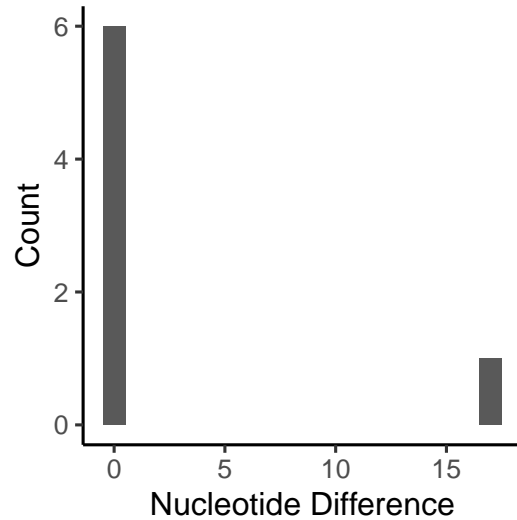
### IGHV3-25\*05

1 sequences assigned  
No exact matches.



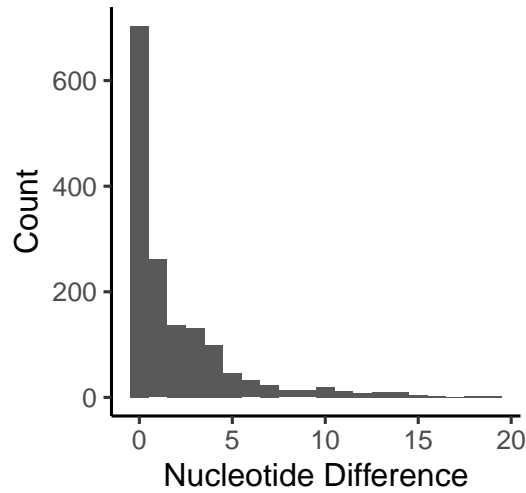
### IGHV3-30-3\*01

7 sequences assigned  
6 (85.7%) exact matches, in which:  
6 unique CDR3  
3 unique J



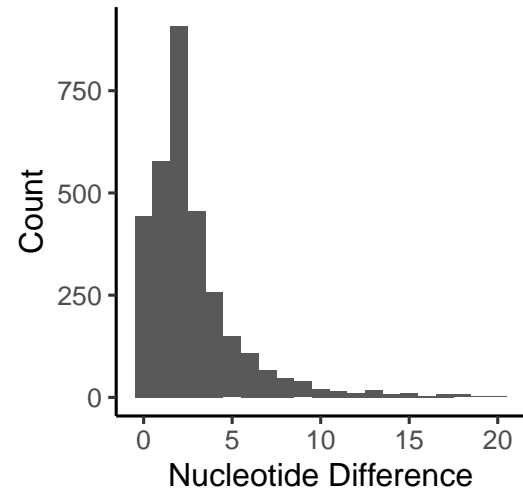
### IGHV3-30\*03\_T288C

1542 sequences assigned  
704 (45.7%) exact matches, in which:  
682 unique CDR3  
7 unique J



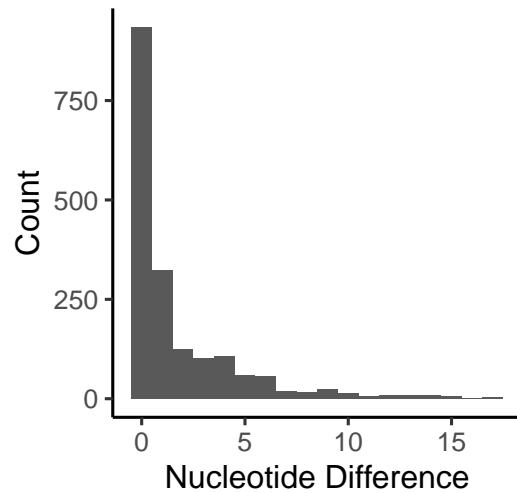
### IGHV3-33\*06

3176 sequences assigned  
444 (14%) exact matches, in which:  
438 unique CDR3  
7 unique J



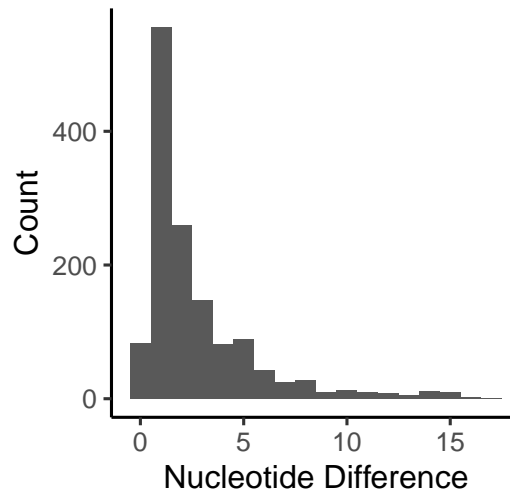
### IGHV3-30\*03

1831 sequences assigned  
935 (51.1%) exact matches, in which:  
917 unique CDR3  
7 unique J



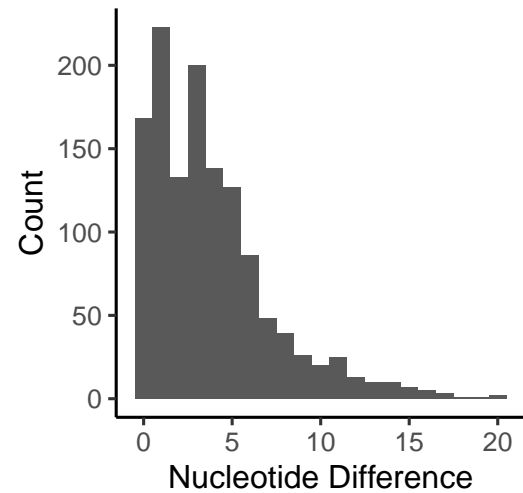
### IGHV3-30\*03\_T288C\_T3

1390 sequences assigned  
83 (6%) exact matches, in which:  
83 unique CDR3  
7 unique J



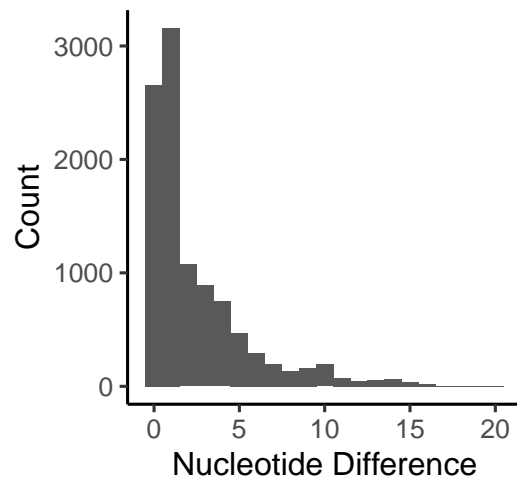
### IGHV3-33\*03\_T247G\_A2

1292 sequences assigned  
168 (13%) exact matches, in which:  
166 unique CDR3  
7 unique J



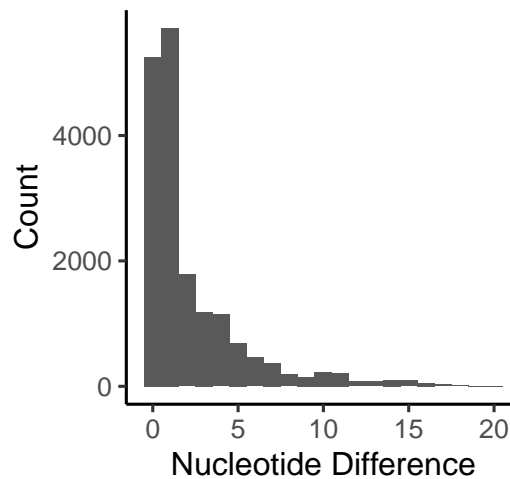
### IGHV3-30\*18

10370 sequences assigned  
2655 (25.6%) exact matches, in which:  
1973 unique CDR3  
7 unique J



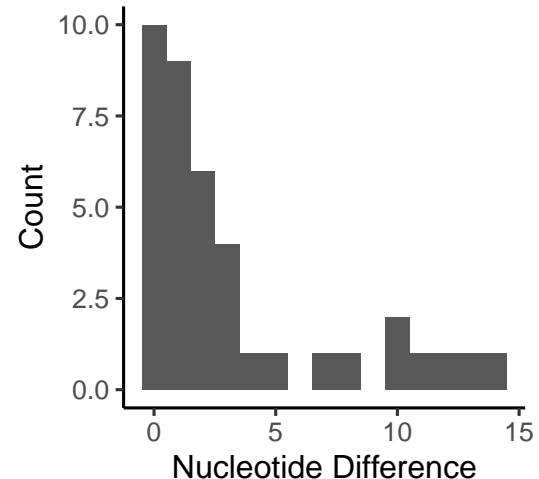
### IGHV3-33\*01

17974 sequences assigned  
5249 (29.2%) exact matches, in which:  
4052 unique CDR3  
7 unique J



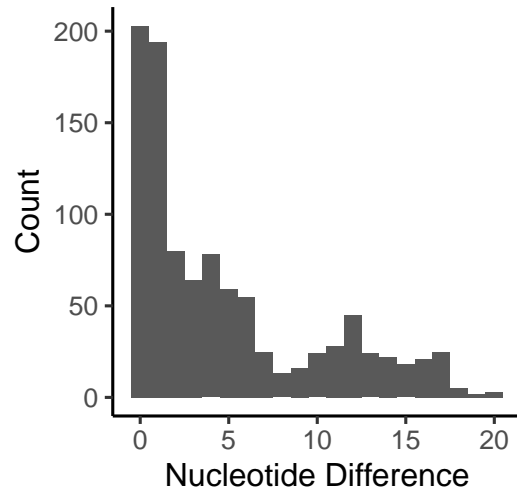
### IGHV3-35\*01

41 sequences assigned  
10 (24.4%) exact matches, in which:  
8 unique CDR3  
5 unique J



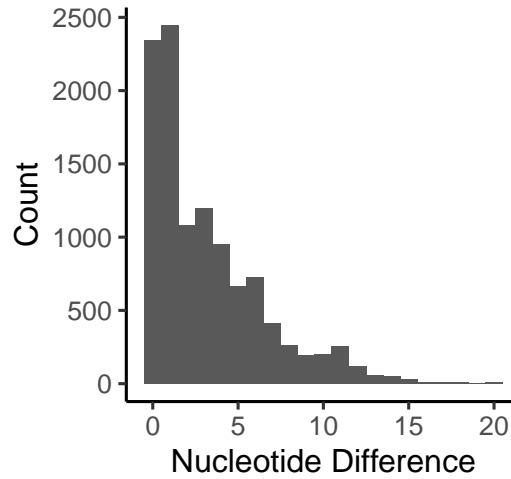
### IGHV3-43\*01

1017 sequences assigned  
203 (20%) exact matches, in which:  
163 unique CDR3  
7 unique J



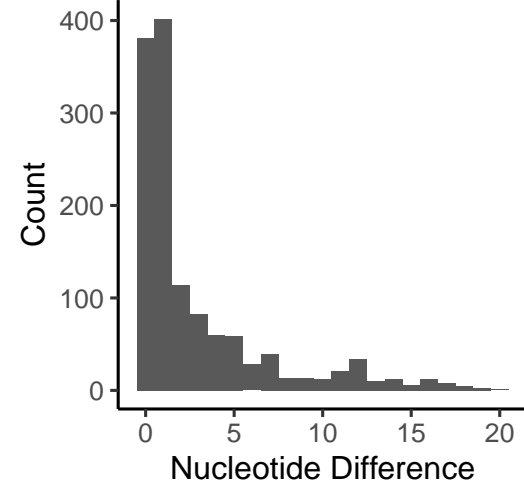
### IGHV3-48\*01

11093 sequences assigned  
2341 (21.1%) exact matches, in which:  
1964 unique CDR3  
7 unique J



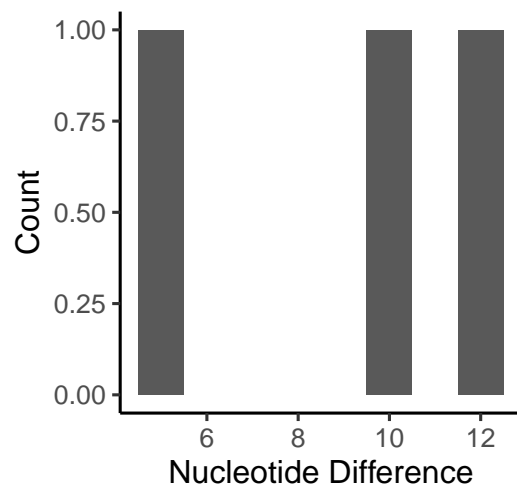
### IGHV3-49\*03

1340 sequences assigned  
381 (28.4%) exact matches, in which:  
316 unique CDR3  
6 unique J



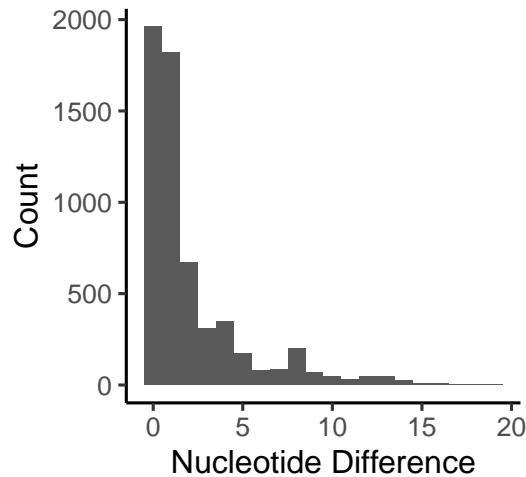
### IGHV3-47\*01

3 sequences assigned  
No exact matches.



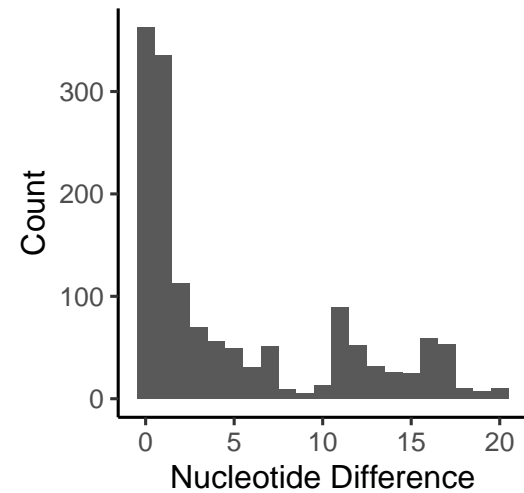
### IGHV3-48\*03

5958 sequences assigned  
1961 (32.9%) exact matches, in which:  
1604 unique CDR3  
7 unique J



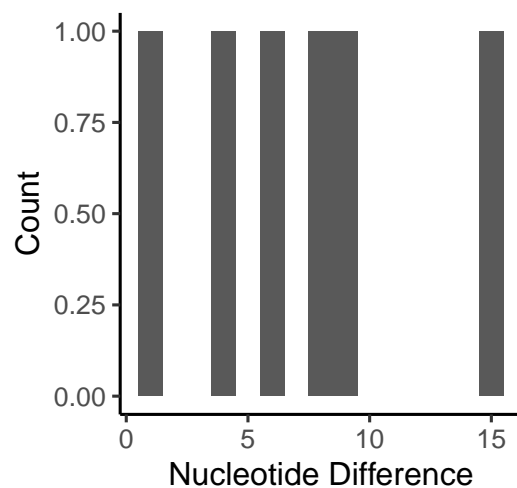
### IGHV3-49\*04

1481 sequences assigned  
363 (24.5%) exact matches, in which:  
297 unique CDR3  
7 unique J



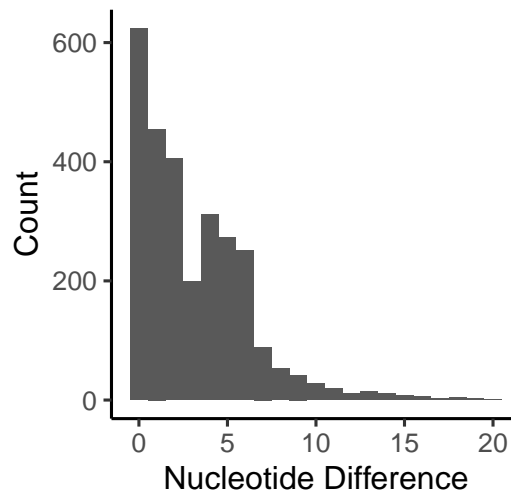
### IGHV3-47\*02

6 sequences assigned  
No exact matches.



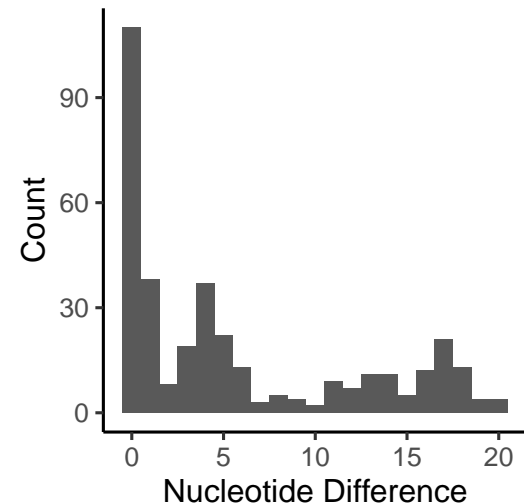
### IGHV3-48\*03\_T303G

2819 sequences assigned  
624 (22.1%) exact matches, in which:  
618 unique CDR3  
7 unique J



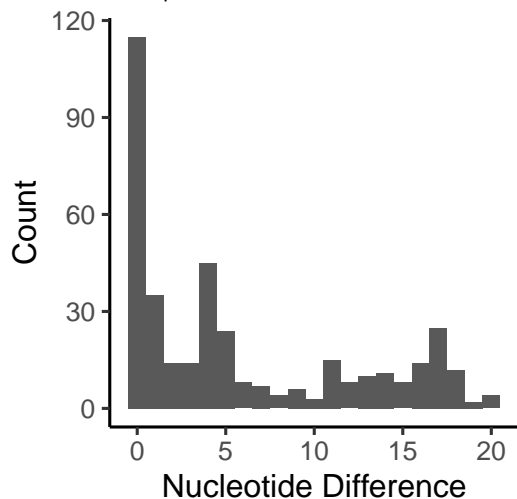
### IGHV3-49\*03\_A313G\_T3

365 sequences assigned  
110 (30.1%) exact matches, in which:  
108 unique CDR3  
7 unique J



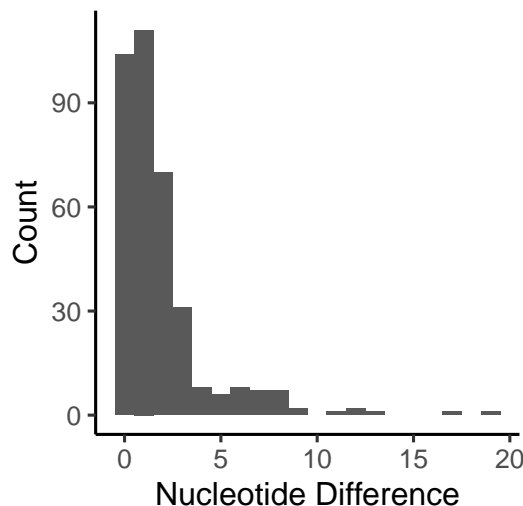
### IGHV3-49\*04\_A313G\_T3

393 sequences assigned  
115 (29.3%) exact matches, in which:  
113 unique CDR3  
7 unique J



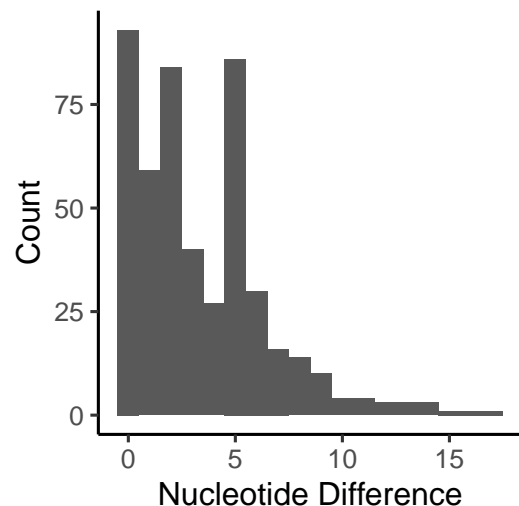
### IGHV3-53\*05\_C300T

363 sequences assigned  
104 (28.7%) exact matches, in which:  
102 unique CDR3  
6 unique J



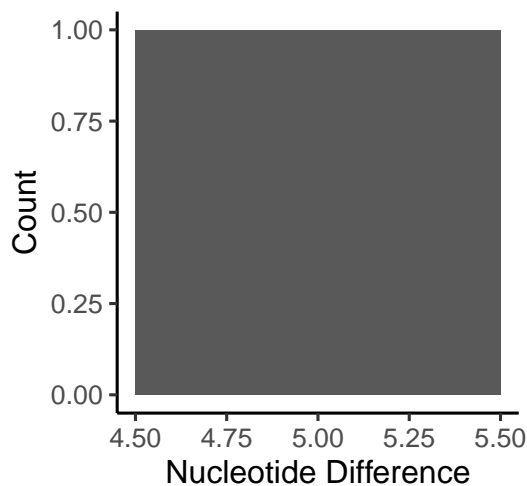
### IGHV3-64\*04\_A210C\_T28

479 sequences assigned  
93 (19.4%) exact matches, in which:  
93 unique CDR3  
7 unique J



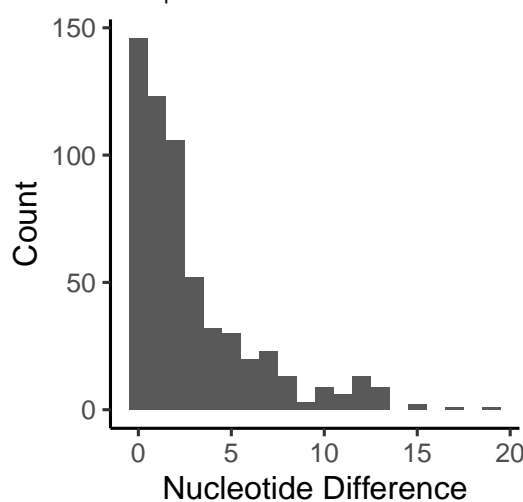
### IGHV3-52\*01

1 sequences assigned  
No exact matches.



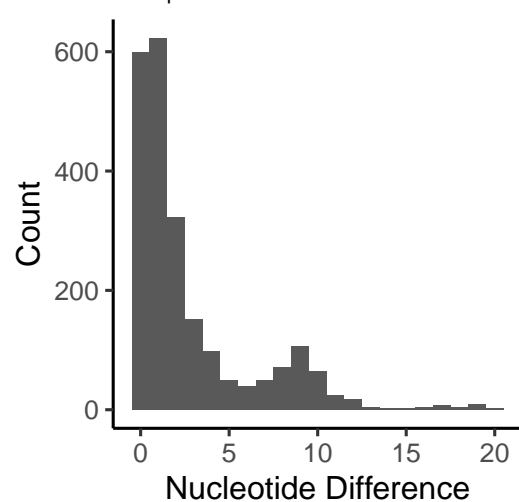
### IGHV3-64\*01

596 sequences assigned  
146 (24.5%) exact matches, in which:  
129 unique CDR3  
7 unique J



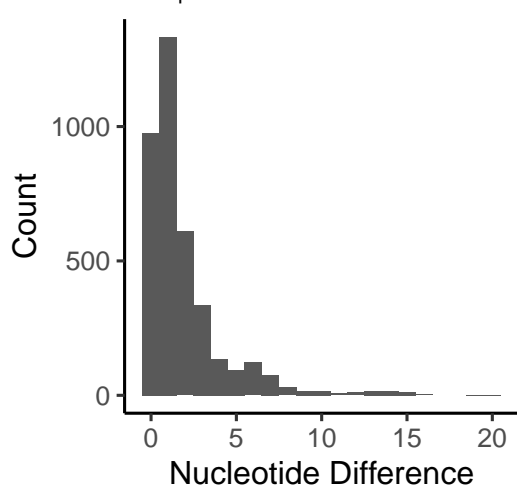
### IGHV3-66\*02

2292 sequences assigned  
600 (26.2%) exact matches, in which:  
480 unique CDR3  
7 unique J



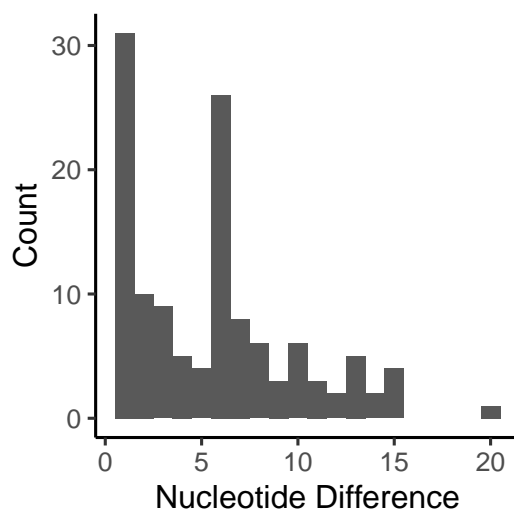
### IGHV3-53\*02

3822 sequences assigned  
976 (25.5%) exact matches, in which:  
795 unique CDR3  
7 unique J



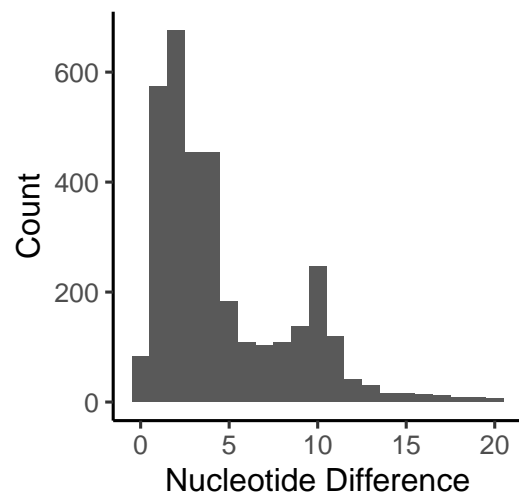
### IGHV3-64\*04

126 sequences assigned  
No exact matches.



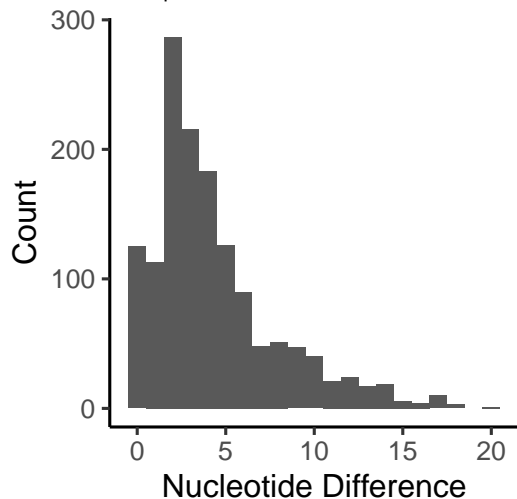
### IGHV3-66\*01\_A223C

3438 sequences assigned  
83 (2.4%) exact matches, in which:  
83 unique CDR3  
7 unique J



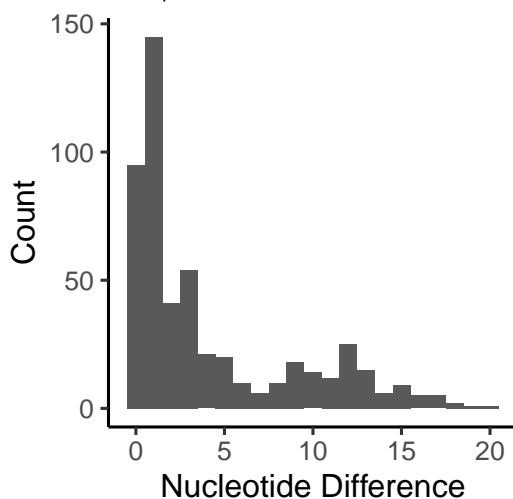
### IGHV3-66\*01\_A223C\_T2

1449 sequences assigned  
125 (8.6%) exact matches, in which:  
125 unique CDR3  
7 unique J



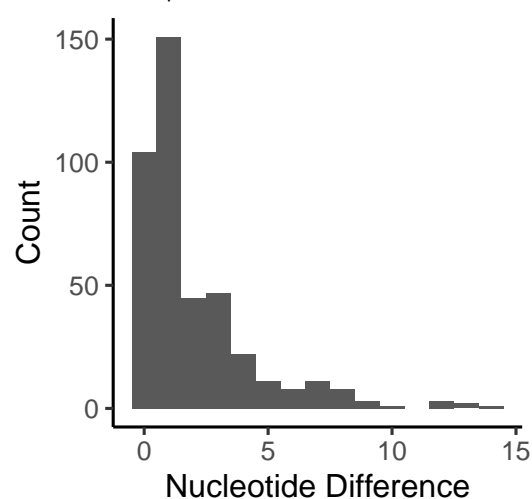
### IGHV3-72\*01

526 sequences assigned  
95 (18.1%) exact matches, in which:  
71 unique CDR3  
6 unique J



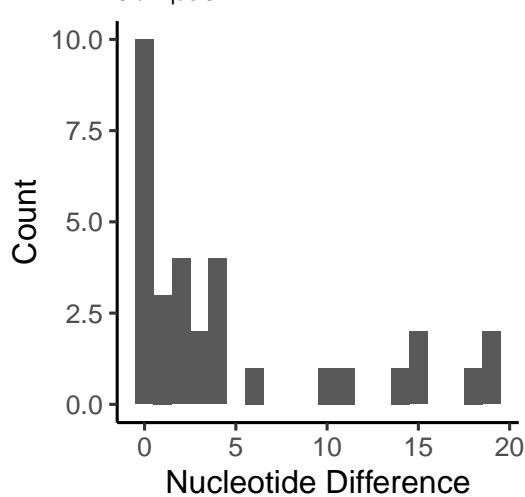
### IGHV3-73\*02

418 sequences assigned  
104 (24.9%) exact matches, in which:  
80 unique CDR3  
5 unique J



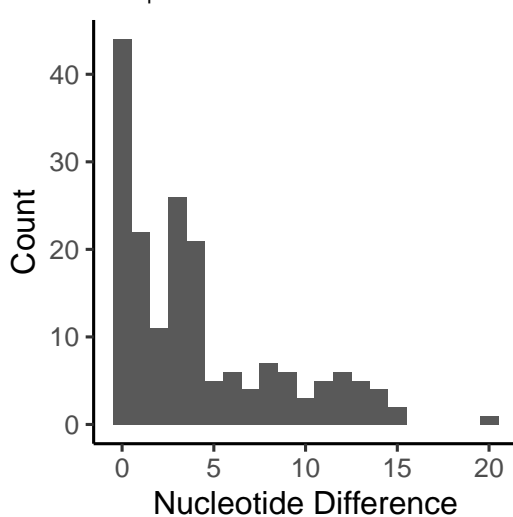
### IGHV3-69-1\*01

36 sequences assigned  
10 (27.8%) exact matches, in which:  
9 unique CDR3  
3 unique J



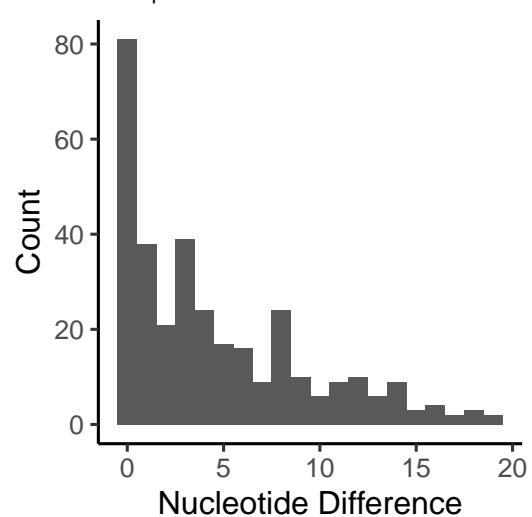
### IGHV3-72\*01\_T315G

181 sequences assigned  
44 (24.3%) exact matches, in which:  
42 unique CDR3  
6 unique J



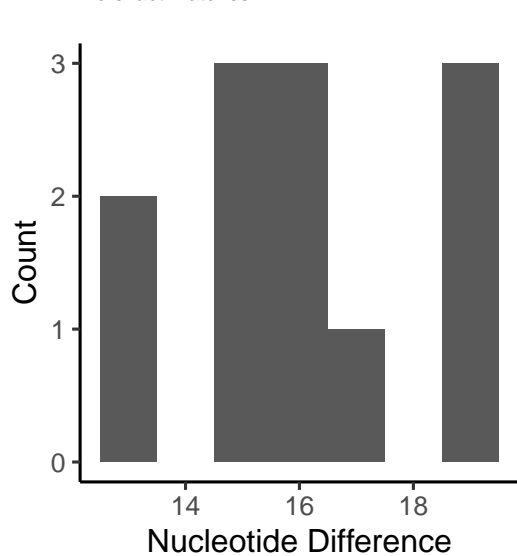
### IGHV3-73\*01\_A313G\_T3

343 sequences assigned  
81 (23.6%) exact matches, in which:  
81 unique CDR3  
6 unique J



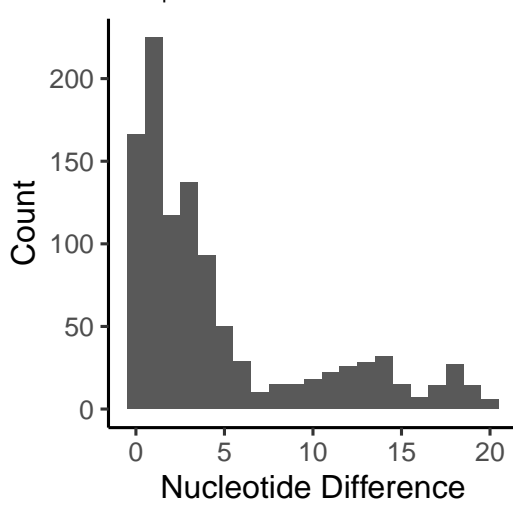
### IGHV3-71\*04

14 sequences assigned  
No exact matches.



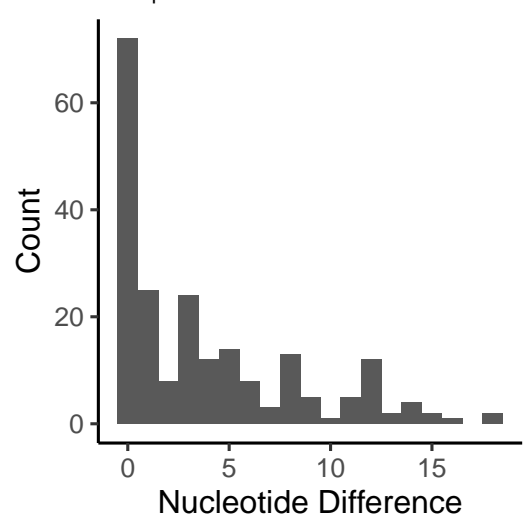
### IGHV3-73\*01

1083 sequences assigned  
166 (15.3%) exact matches, in which:  
119 unique CDR3  
6 unique J



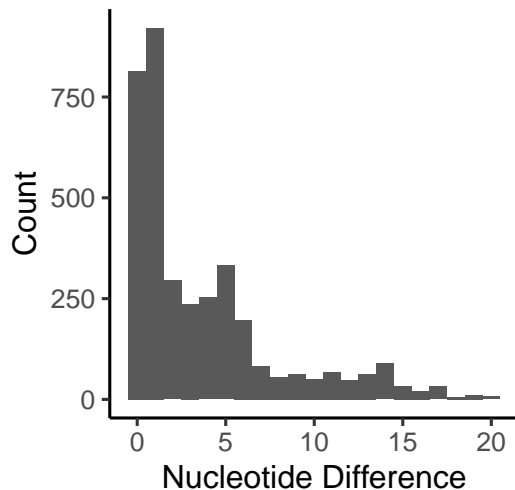
### IGHV3-73\*02\_A313G\_T3

213 sequences assigned  
72 (33.8%) exact matches, in which:  
71 unique CDR3  
7 unique J



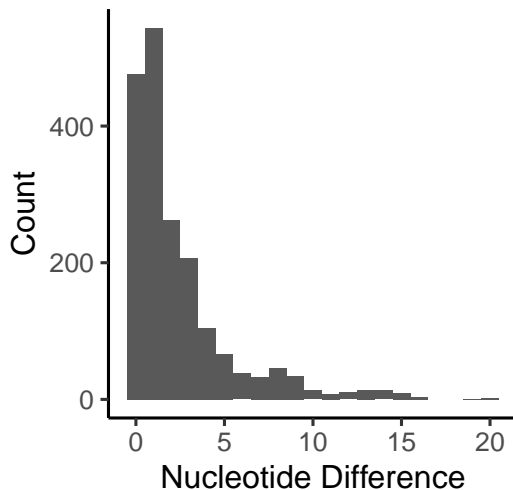
### IGHV3-74\*01

3727 sequences assigned  
815 (21.9%) exact matches, in which:  
635 unique CDR3  
7 unique J



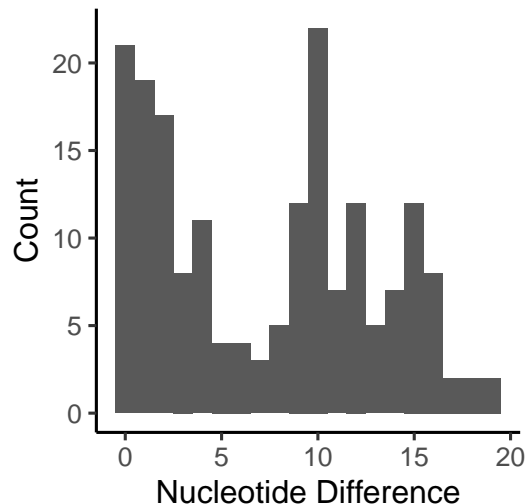
### IGHV3-64D\*06

1907 sequences assigned  
476 (25%) exact matches, in which:  
364 unique CDR3  
7 unique J



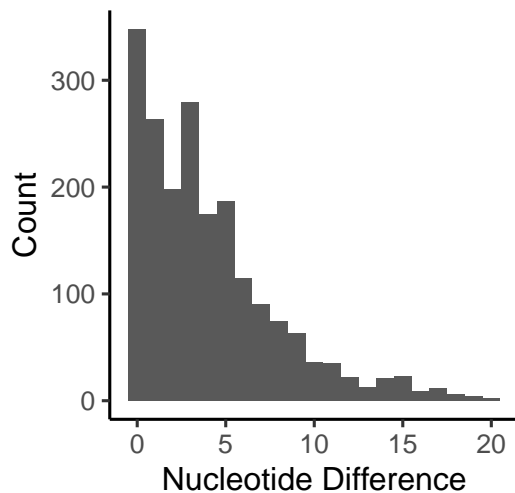
### IGHV3-NL1\*01\_G49A\_T2

185 sequences assigned  
21 (11.4%) exact matches, in which:  
20 unique CDR3  
5 unique J



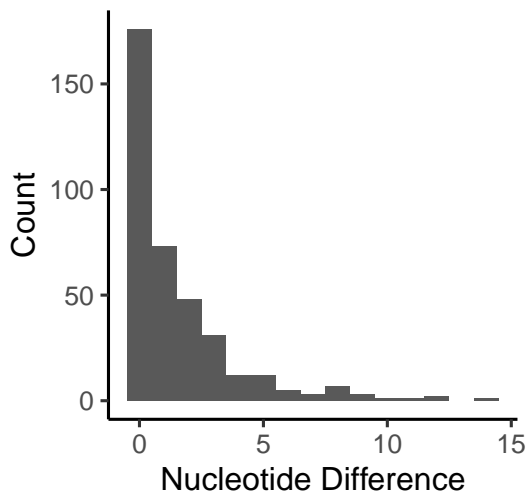
### IGHV3-74\*01\_A315G

1993 sequences assigned  
348 (17.5%) exact matches, in which:  
348 unique CDR3  
7 unique J



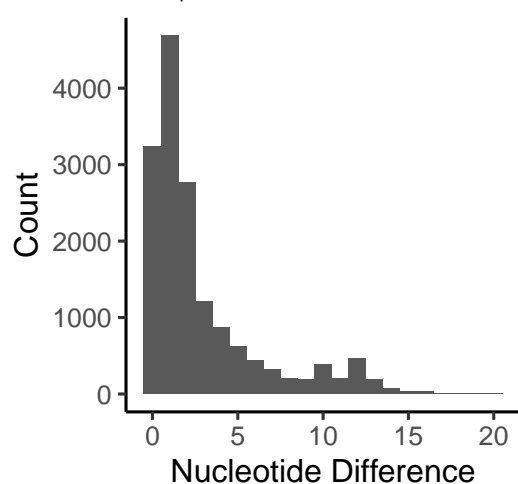
### IGHV3-64D\*06\_T314C\_7

378 sequences assigned  
176 (46.6%) exact matches, in which:  
175 unique CDR3  
6 unique J



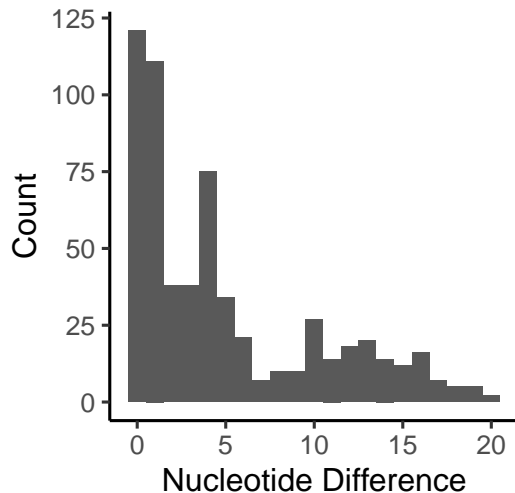
### IGHV4-4\*07

16066 sequences assigned  
3243 (20.2%) exact matches, in which:  
2781 unique CDR3  
7 unique J



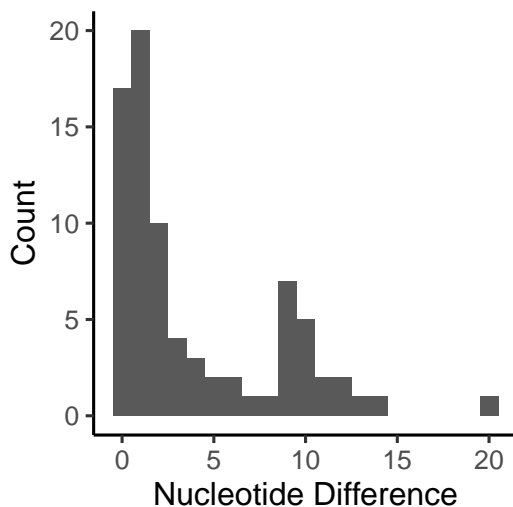
### IGHV3-43D\*04

612 sequences assigned  
121 (19.8%) exact matches, in which:  
102 unique CDR3  
7 unique J



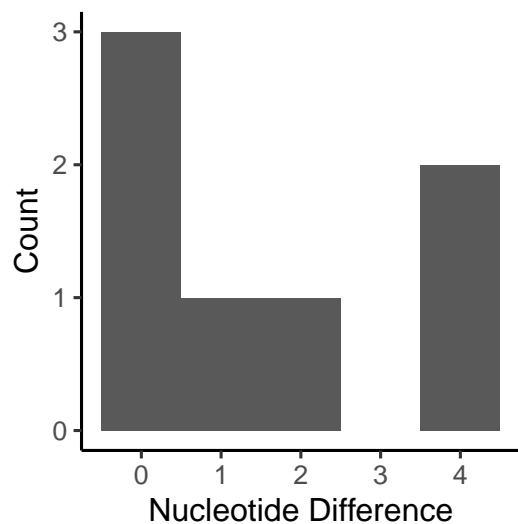
### IGHV3-NL1\*01\_G49A\_C1

79 sequences assigned  
17 (21.5%) exact matches, in which:  
16 unique CDR3  
6 unique J



### IGHV4-28\*01

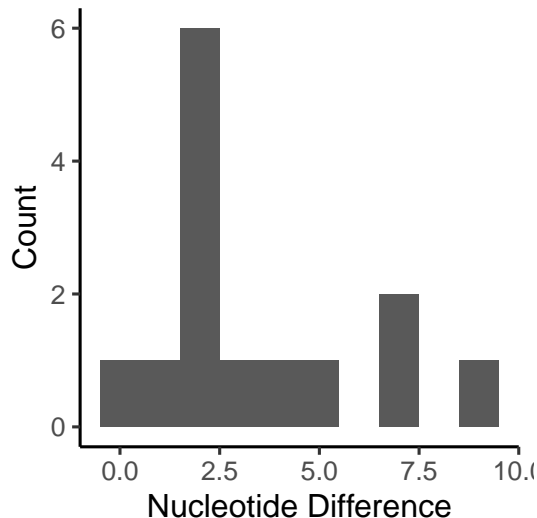
7 sequences assigned  
3 (42.9%) exact matches, in which:  
2 unique CDR3  
2 unique J





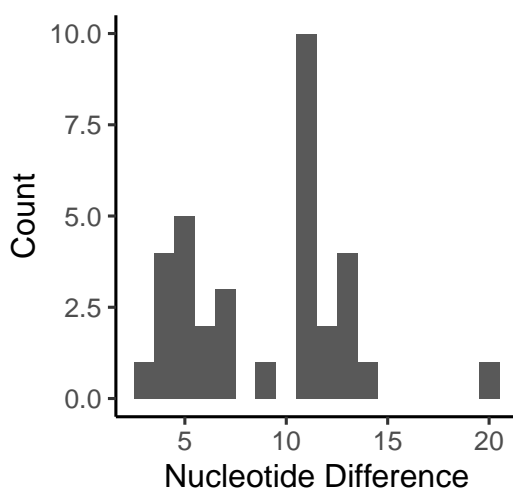
### IGHV4-28\*03

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



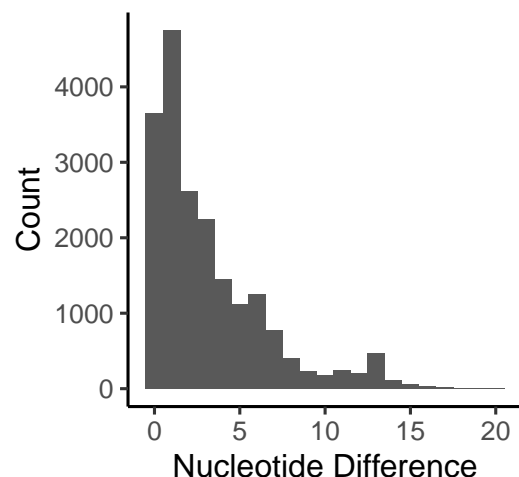
### IGHV4-30-4\*08

35 sequences assigned  
No exact matches.



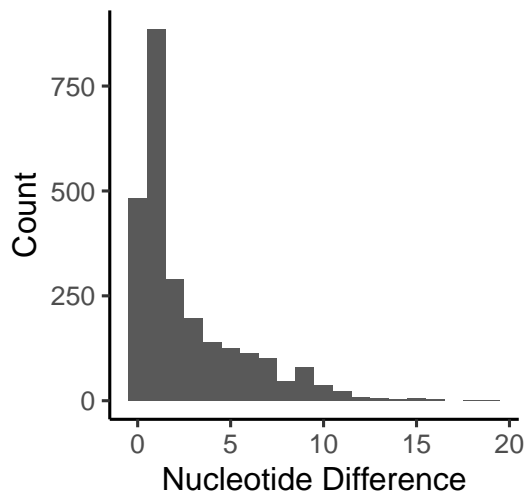
### IGHV4-31\*03

19998 sequences assigned  
3652 (18.3%) exact matches, in which:  
3093 unique CDR3  
7 unique J



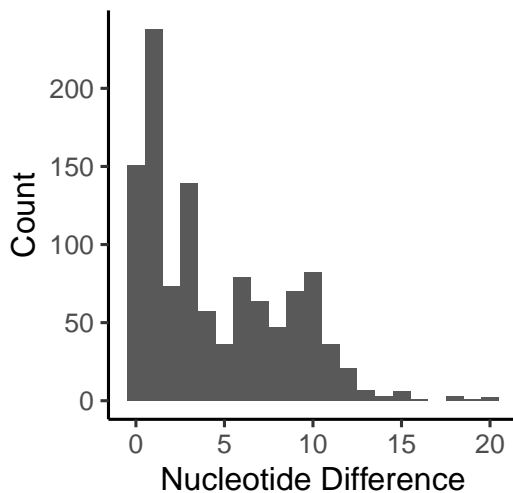
### IGHV4-30-2\*01

2567 sequences assigned  
482 (18.8%) exact matches, in which:  
346 unique CDR3  
7 unique J



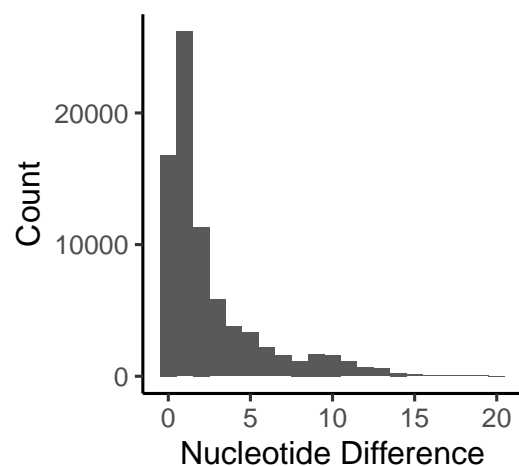
### IGHV4-30-2\*01\_C300T\_

1124 sequences assigned  
151 (13.4%) exact matches, in which:  
150 unique CDR3  
7 unique J



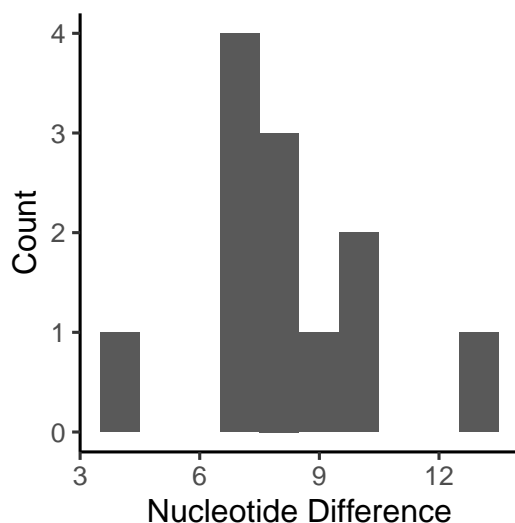
### IGHV4-34\*01

79625 sequences assigned  
16788 (21.1%) exact matches, in which:  
13481 unique CDR3  
7 unique J



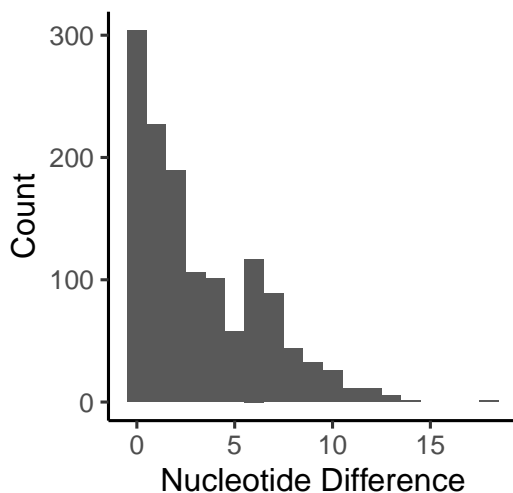
### IGHV4-30-4\*07

13 sequences assigned  
No exact matches.



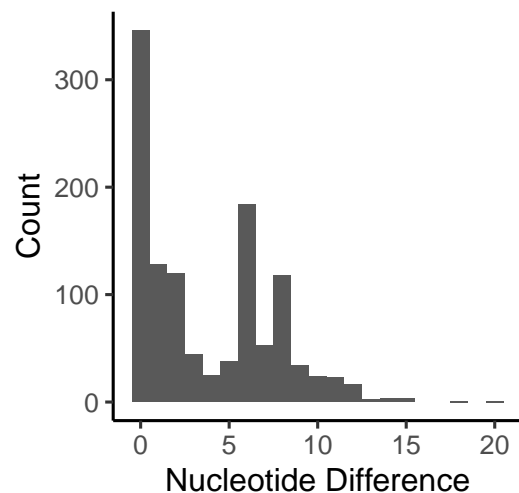
### IGHV4-30-2\*01\_C315G

1339 sequences assigned  
304 (22.7%) exact matches, in which:  
303 unique CDR3  
7 unique J



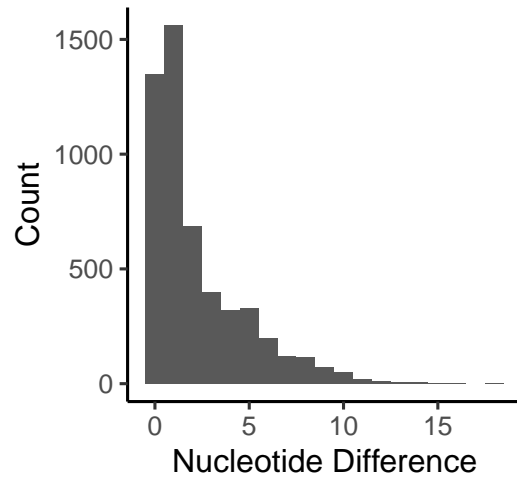
### IGHV4-38-2\*01\_A291G\_

1185 sequences assigned  
346 (29.2%) exact matches, in which:  
346 unique CDR3  
7 unique J



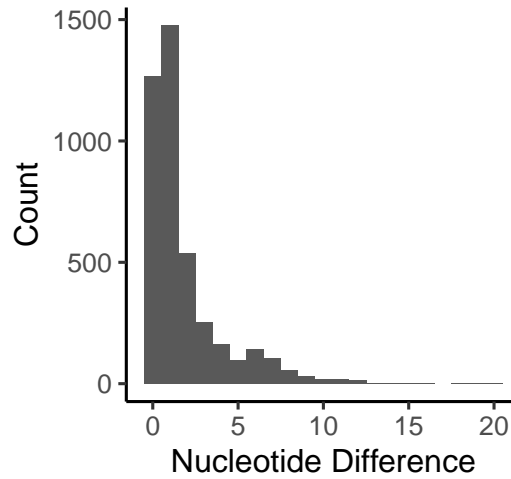
### IGHV4-38-2\*02\_A70G

5309 sequences assigned  
1349 (25.4%) exact matches, in which:  
1151 unique CDR3  
7 unique J



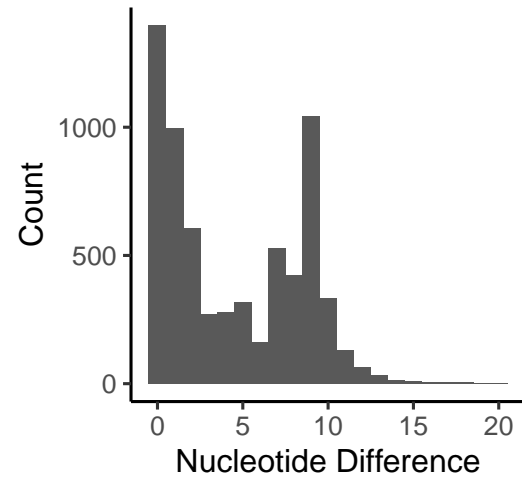
### IGHV4-39\*02\_C258G

4203 sequences assigned  
1267 (30.1%) exact matches, in which:  
1213 unique CDR3  
7 unique J



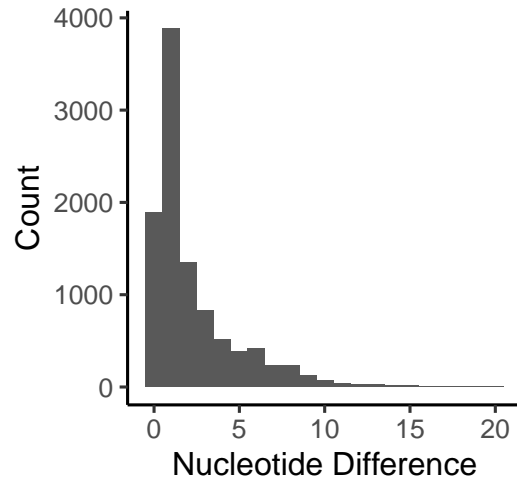
### IGHV4-59\*12\_C300T

6669 sequences assigned  
1397 (20.9%) exact matches, in which:  
1369 unique CDR3  
7 unique J



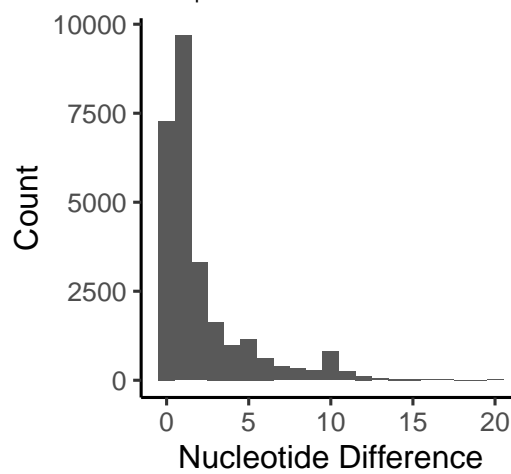
### IGHV4-39\*01

10161 sequences assigned  
1894 (18.6%) exact matches, in which:  
1488 unique CDR3  
7 unique J



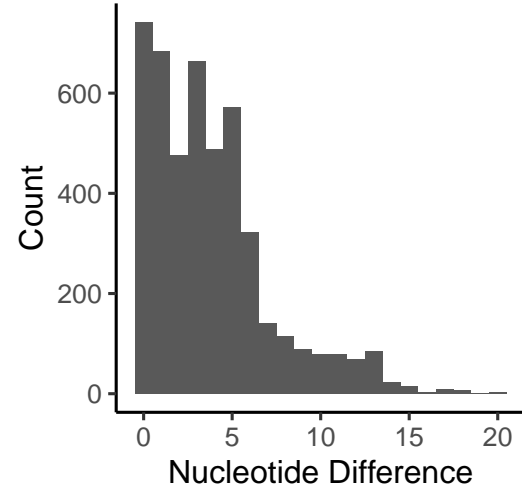
### IGHV4-59\*01

27193 sequences assigned  
7285 (26.8%) exact matches, in which:  
6024 unique CDR3  
7 unique J



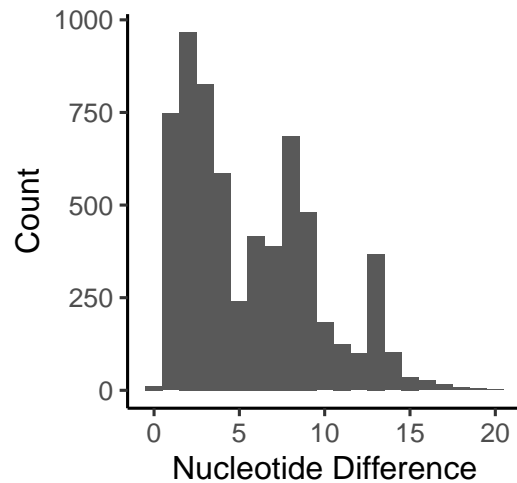
### IGHV4-61\*01

4682 sequences assigned  
742 (15.8%) exact matches, in which:  
660 unique CDR3  
6 unique J



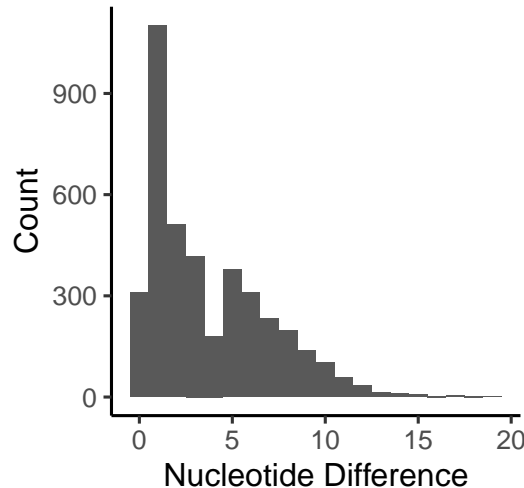
### IGHV4-39\*07

6376 sequences assigned  
11 (0.2%) exact matches, in which:  
11 unique CDR3  
4 unique J



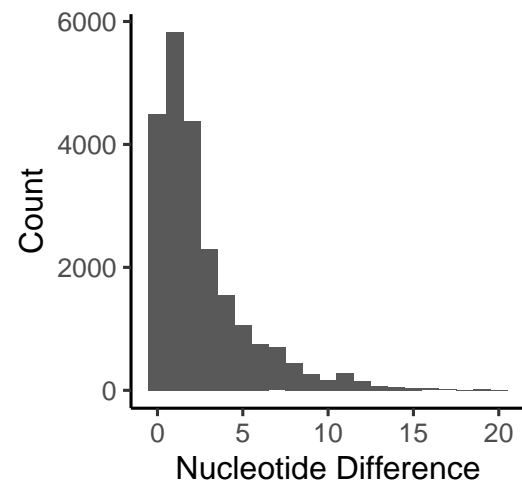
### IGHV4-59\*12

4081 sequences assigned  
310 (7.6%) exact matches, in which:  
304 unique CDR3  
7 unique J



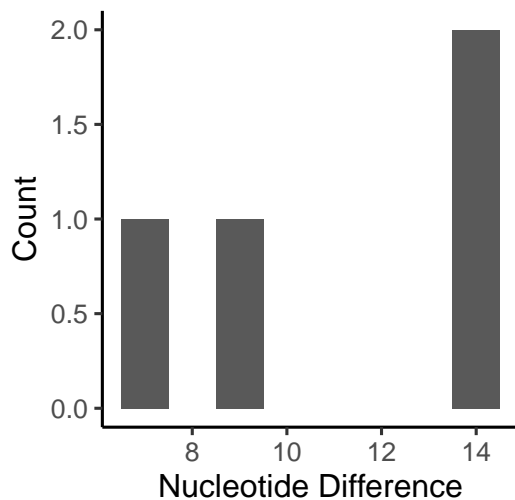
### IGHV4-61\*02

22679 sequences assigned  
4491 (19.8%) exact matches, in which:  
3814 unique CDR3  
7 unique J



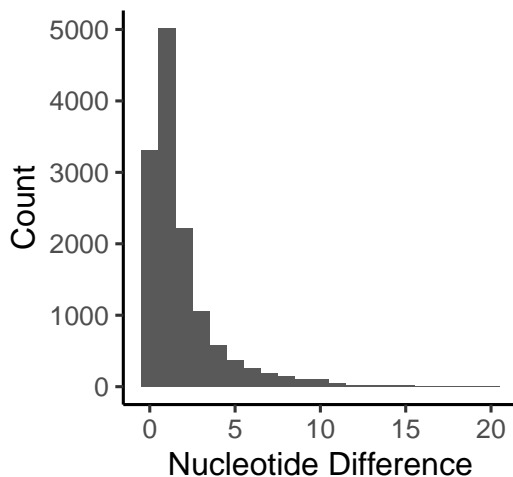
### IGHV4/OR15–8\*01

35 sequences assigned  
No exact matches.



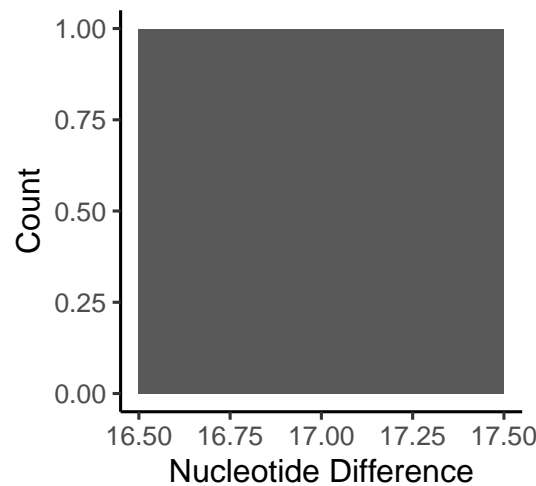
### IGHV5–51\*03

13584 sequences assigned  
3316 (24.4%) exact matches, in which:  
2594 unique CDR3  
7 unique J



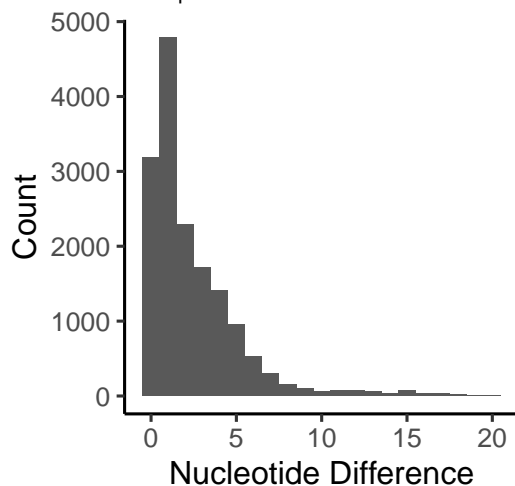
### IGHV3/OR16–10\*03

1 sequences assigned  
No exact matches.



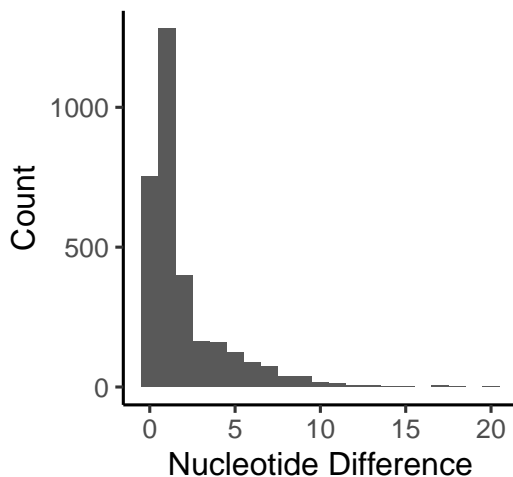
### IGHV5–10–1\*03

16111 sequences assigned  
3182 (19.8%) exact matches, in which:  
2592 unique CDR3  
7 unique J



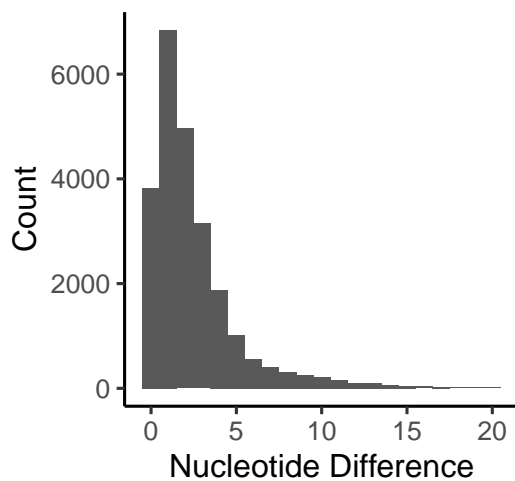
### IGHV6–1\*01

3190 sequences assigned  
753 (23.6%) exact matches, in which:  
534 unique CDR3  
7 unique J



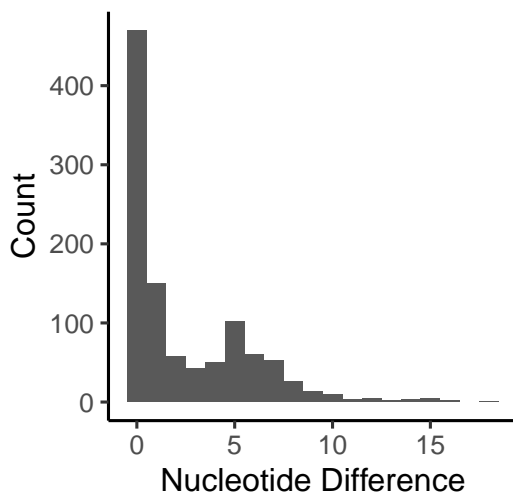
### IGHV5–51\*01

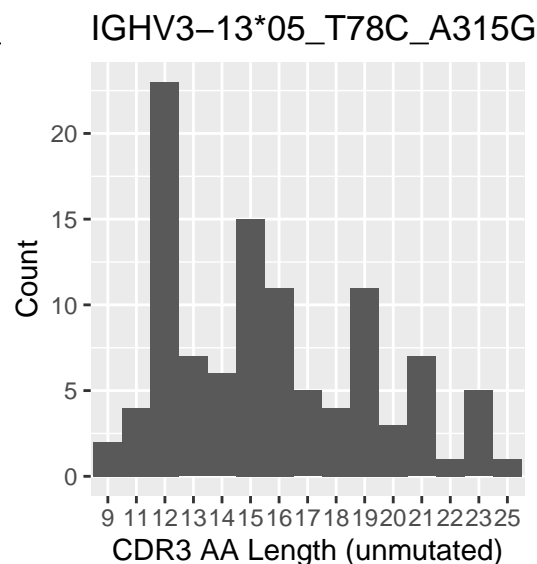
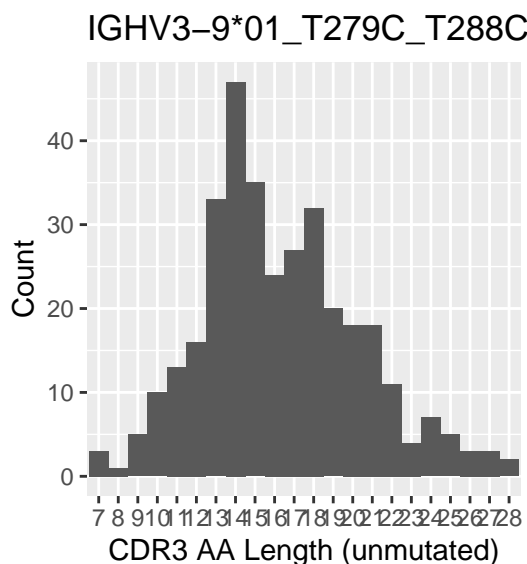
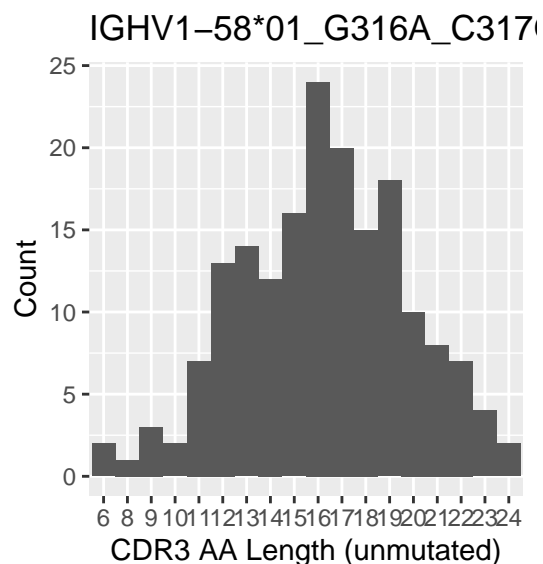
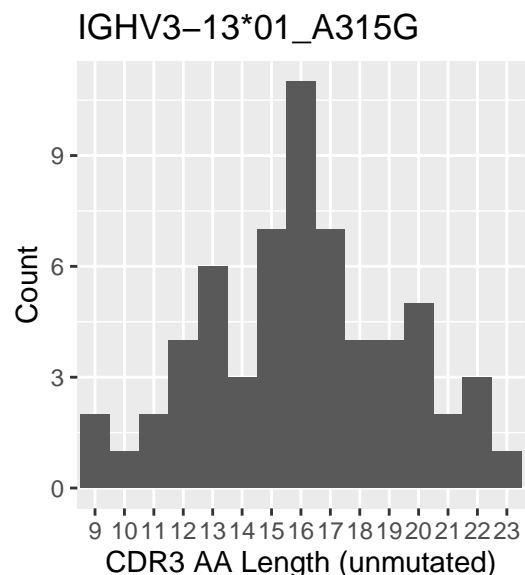
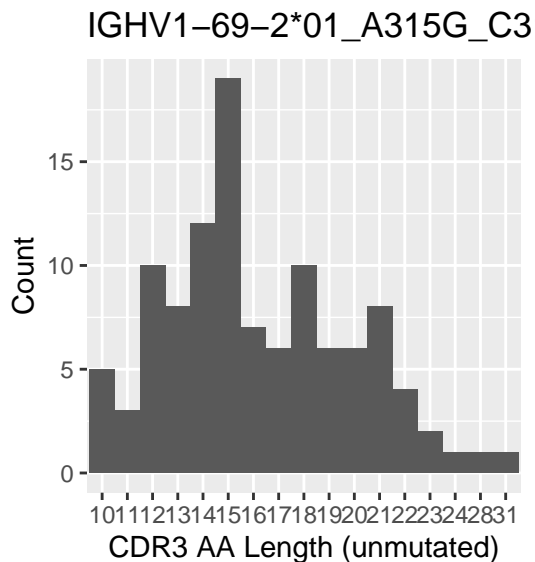
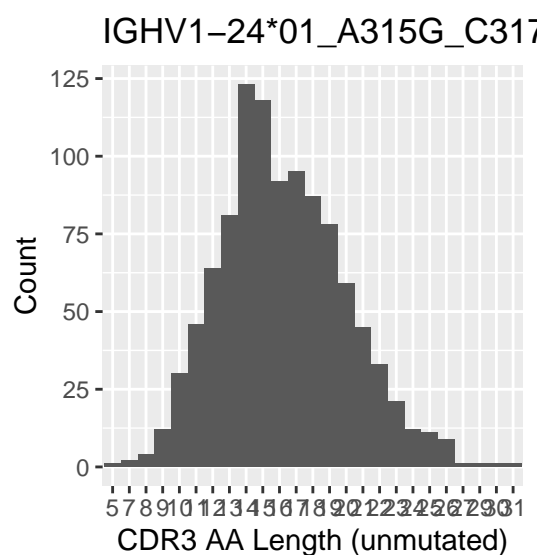
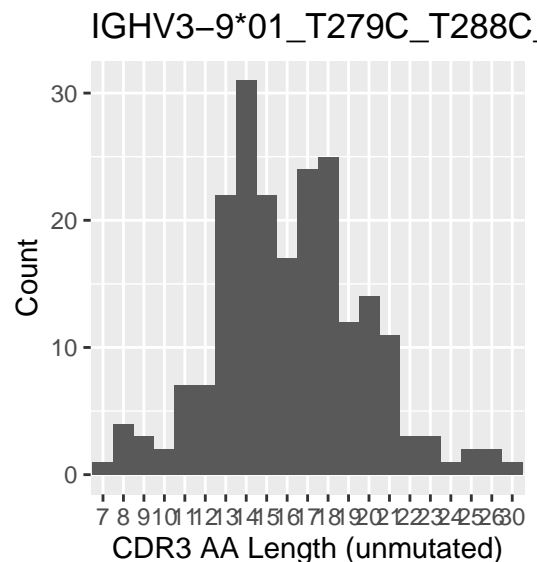
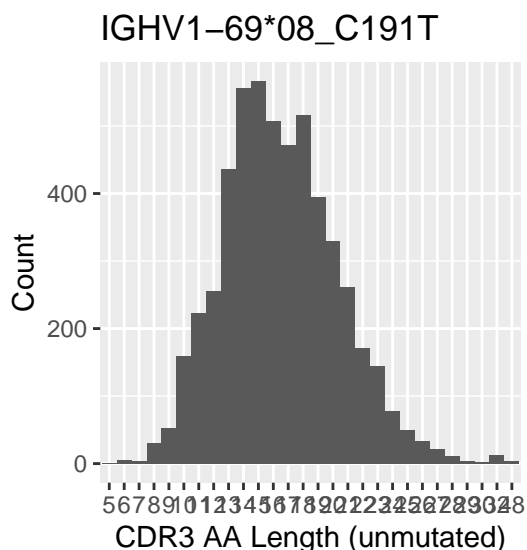
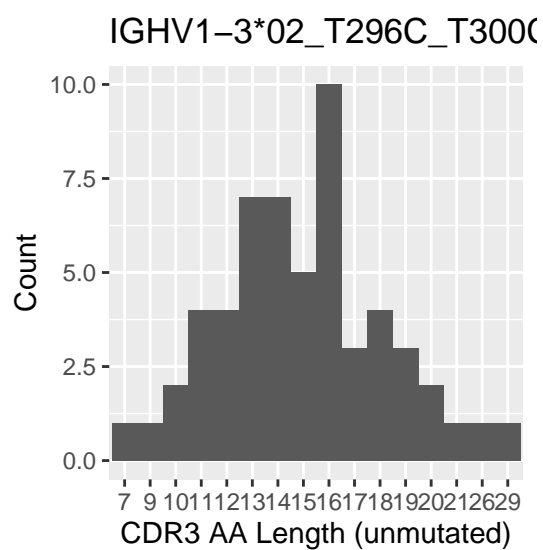
24196 sequences assigned  
3826 (15.8%) exact matches, in which:  
2976 unique CDR3  
7 unique J



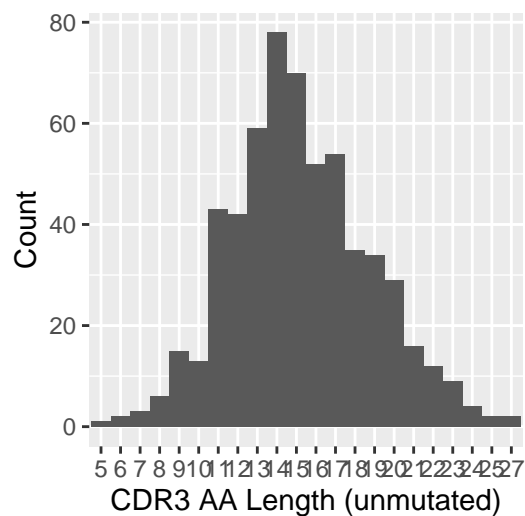
### IGHV6–1\*01\_A315G

1054 sequences assigned  
470 (44.6%) exact matches, in which:  
469 unique CDR3  
7 unique J

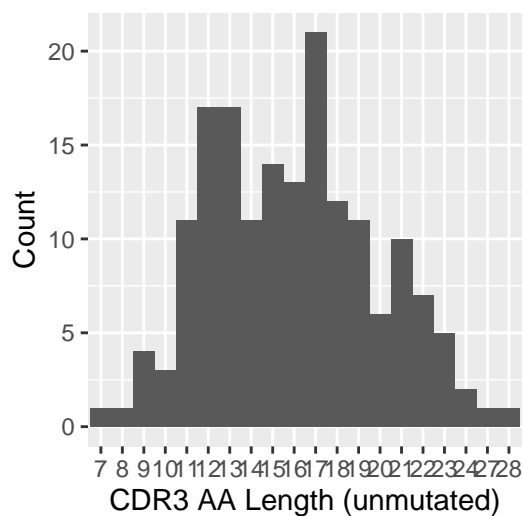




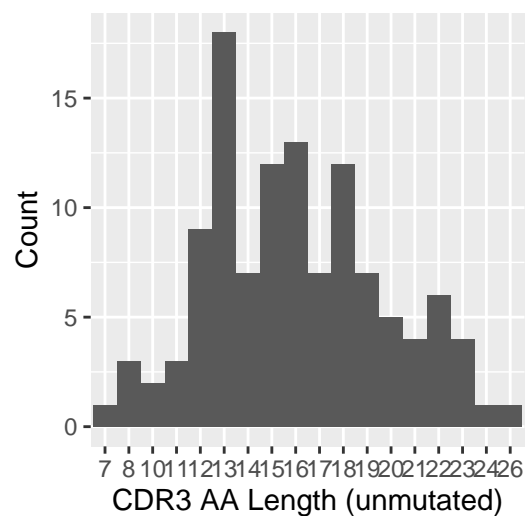
IGHV3-23\*04\_A39C



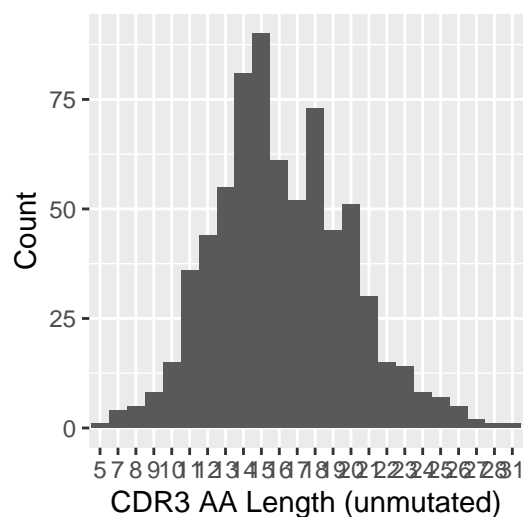
IGHV3-33\*03\_T247G\_A256



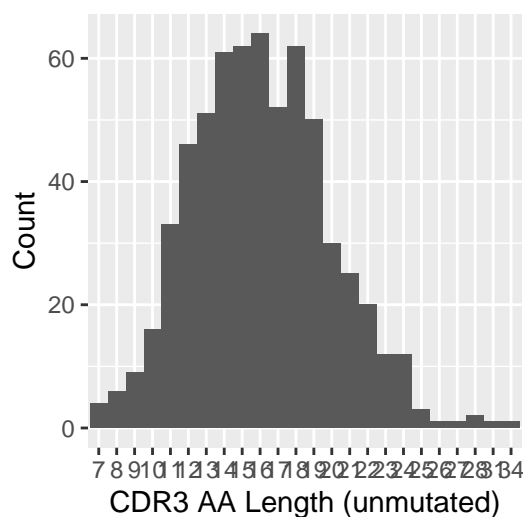
IGHV3-49\*04\_A313G\_T315



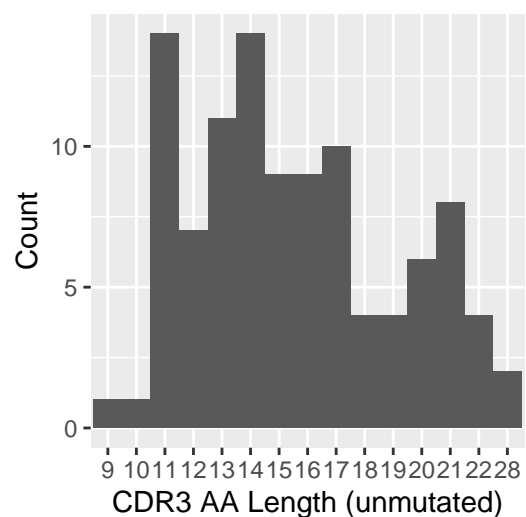
IGHV3-30\*03\_T288C



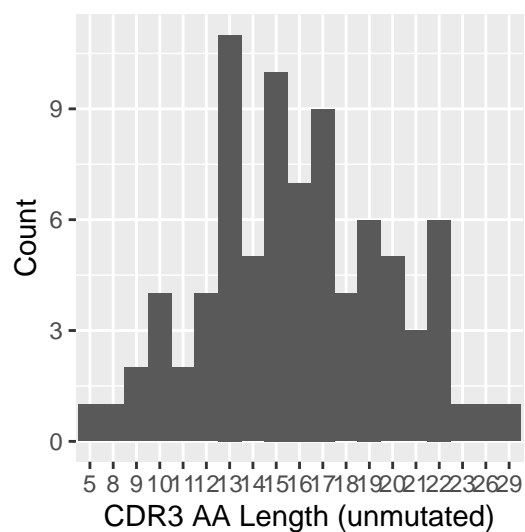
IGHV3-48\*03\_T303G



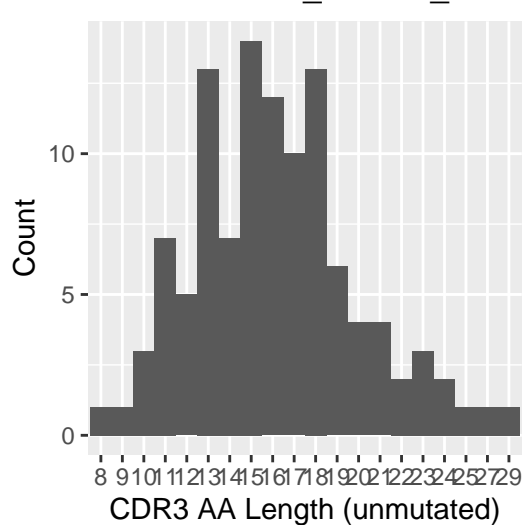
IGHV3-53\*05\_C300T



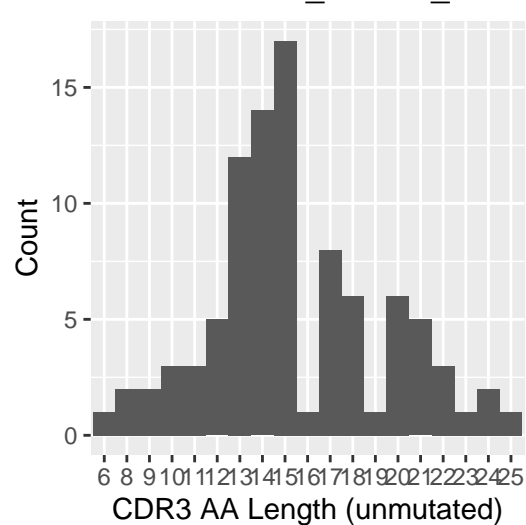
IGHV3-30\*03\_T288C\_T300C



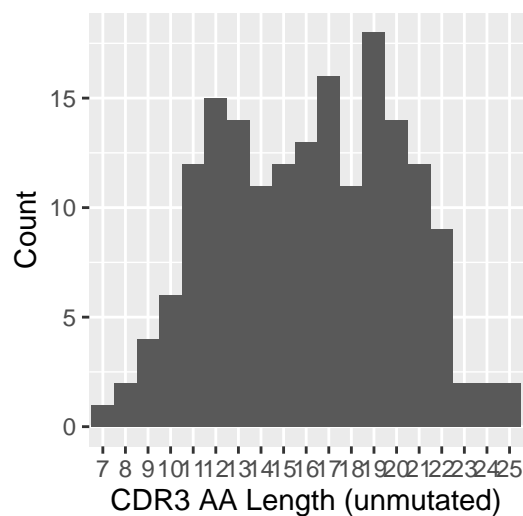
IGHV3-49\*03\_A313G\_T315



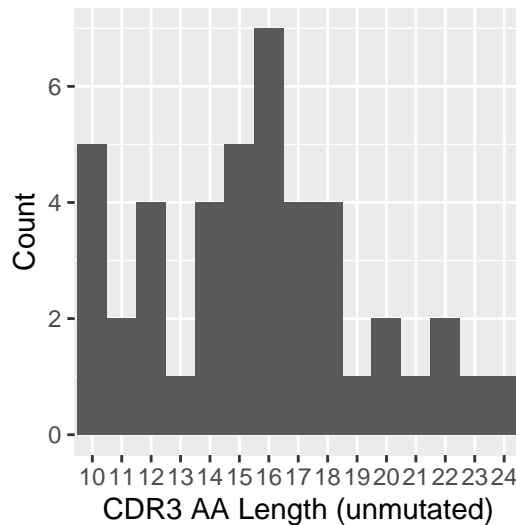
IGHV3-64\*04\_A210C\_T288C



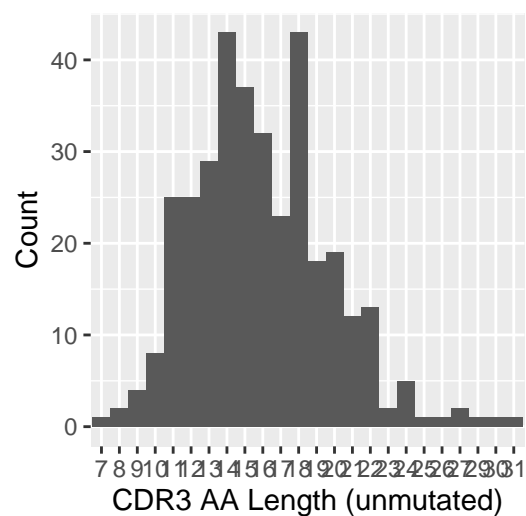
IGHV3-64D\*06\_T314C\_A31



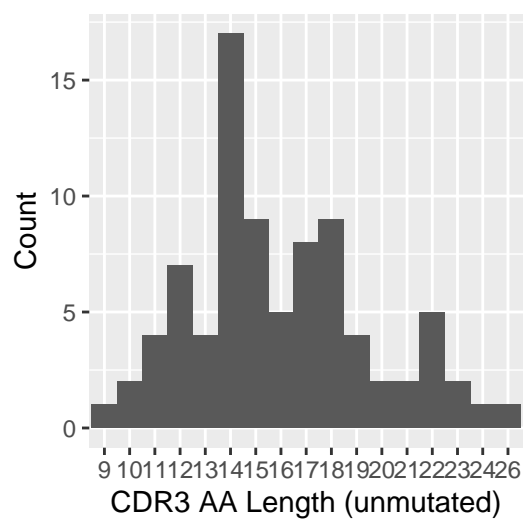
IGHV3-72\*01\_T315G



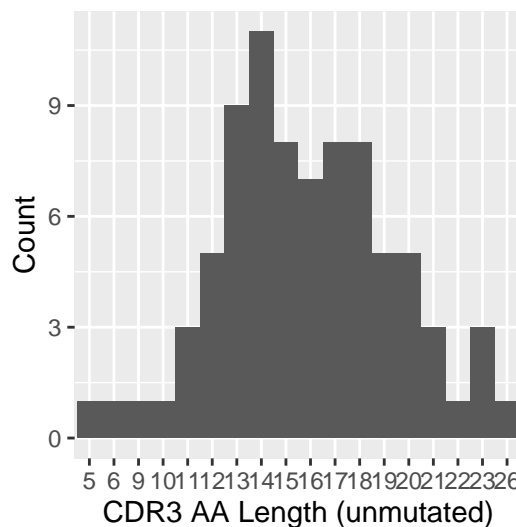
IGHV3-74\*01\_A315G



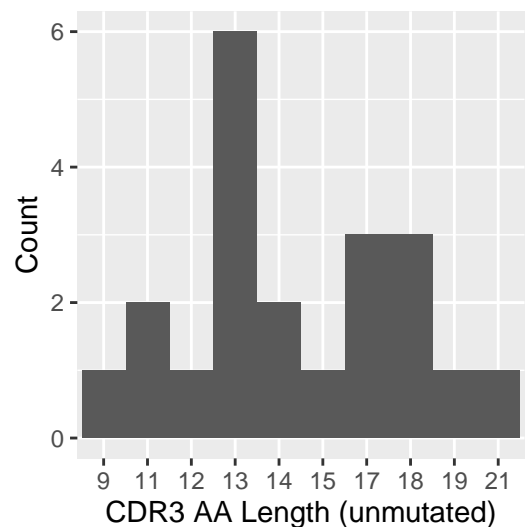
IGHV3-66\*01\_A223C



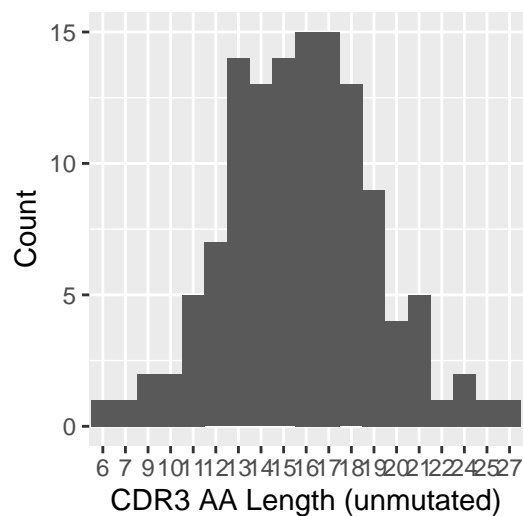
IGHV3-73\*01\_A313G\_T315G



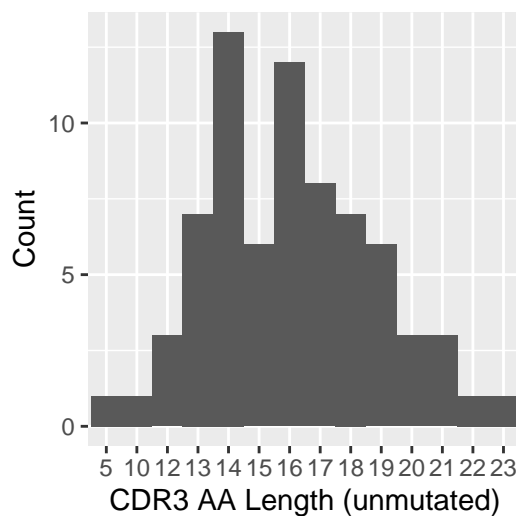
IGHV3-NL1\*01\_G49A\_T201C



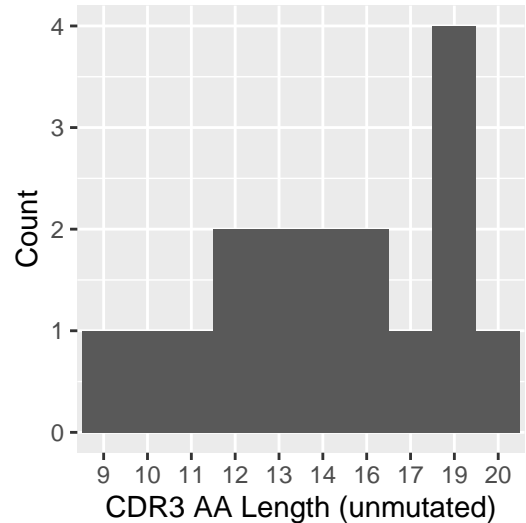
IGHV3-66\*01\_A223C\_T267C



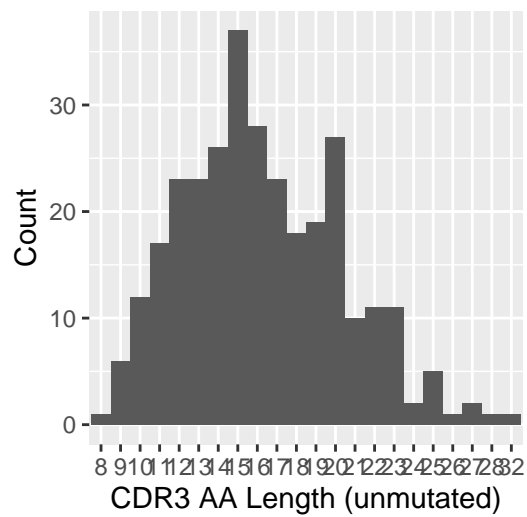
IGHV3-73\*02\_A313G\_T315C



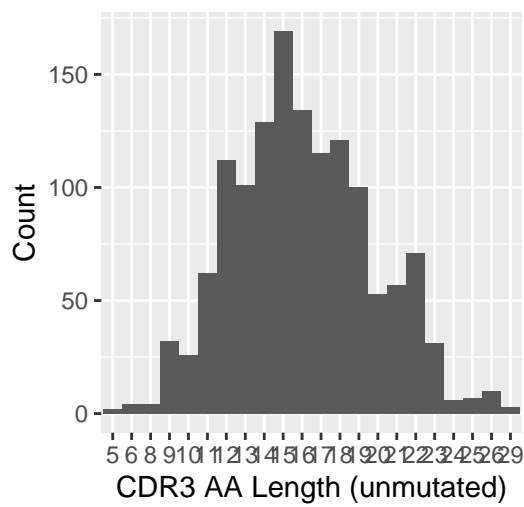
IGHV3-NL1\*01\_G49A\_C159C



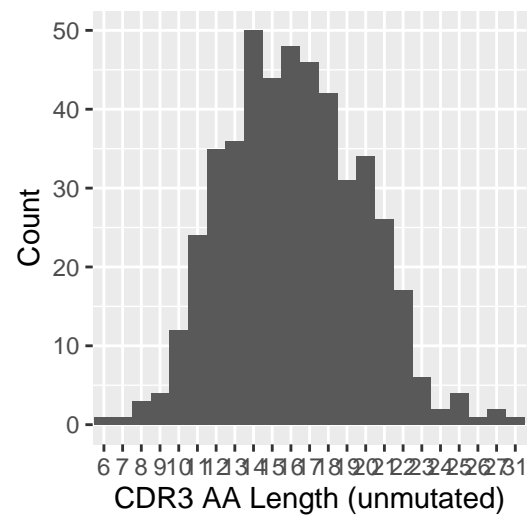
IGHV4-30-2\*01\_C315G



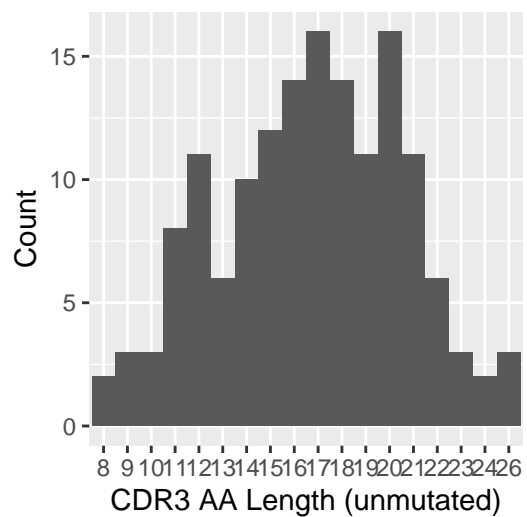
IGHV4-38-2\*02\_A70G



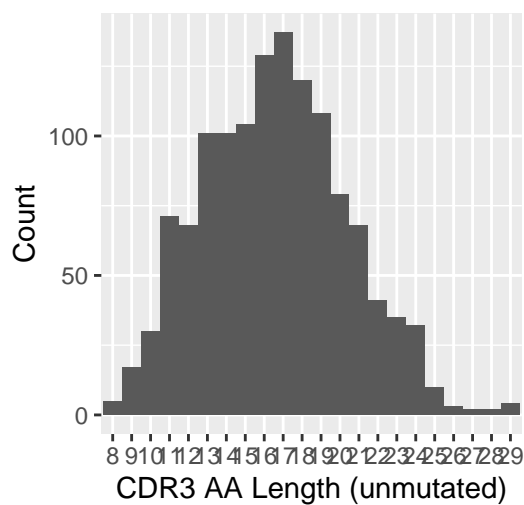
IGHV6-1\*01\_A315G



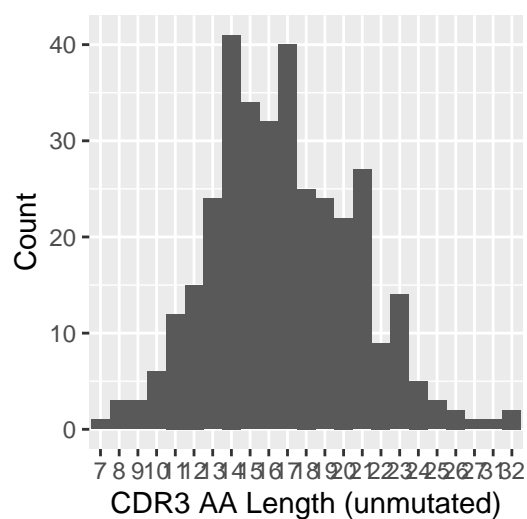
IGHV4-30-2\*01\_C300T\_C3'



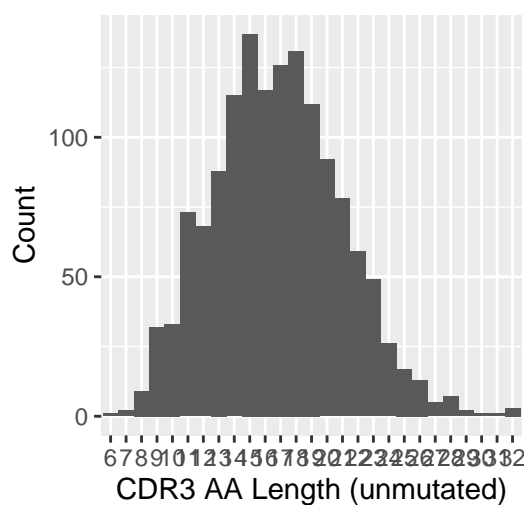
IGHV4-39\*02\_C258G



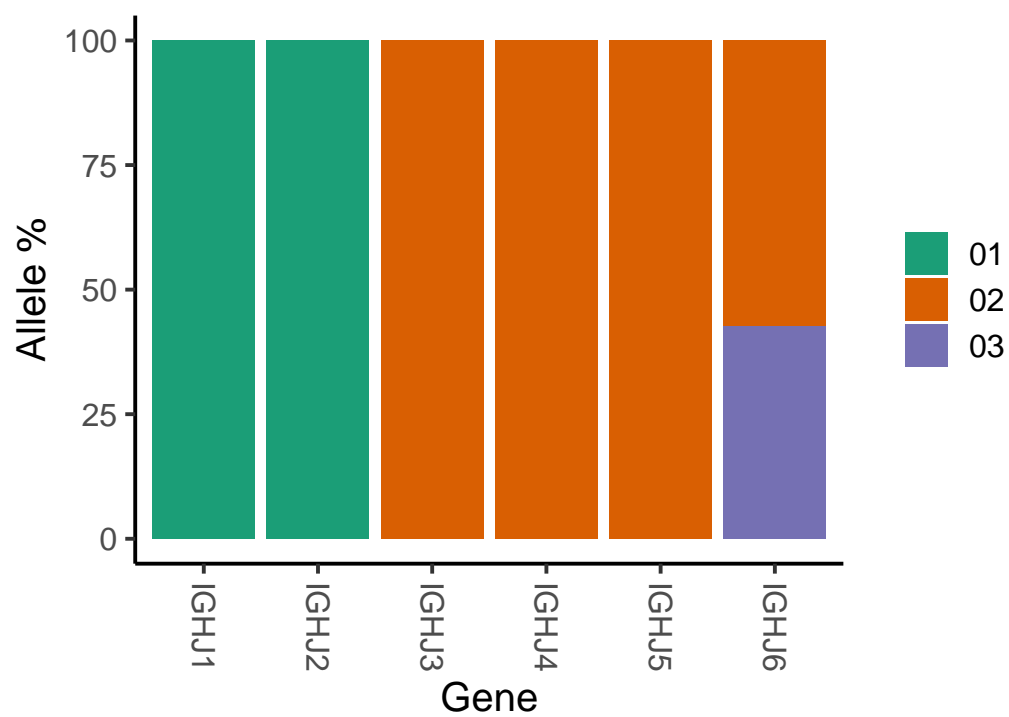
IGHV4-38-2\*01\_A291G\_C3



IGHV4-59\*12\_C300T



Allele Usage





Sequence Count by IGHJ6 allele usage

